

# SD Times

SOFTWARE DEVELOPMENT

The Industry Newspaper for Software Development Managers

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## ADOPTION RATE FOR JAVA SHOWS SLIGHT DECLINE

New study indicates dip in developers using, planning to use Java technologies

BY ALAN ZEICHICK

Midway through 2002, Java remains a critically important technology for the enterprise. But a recent study from BZ Research indicates that intended adoption of Java has slipped slightly from last fall. The latest Java Awareness Study, conducted in August 2002, found that 50 percent of respondents indicated they are using Java today within their company. This compares with a response of 52.5 percent who were asked this question in November 2001.

The study was conducted

FIRST OF A TWO-PART SERIES

across a wide base of subscribers to SD Times, with 1,425 subscribers responding. BZ Research is a subsidiary of BZ Media LLC (www.bzmedia.com), publisher of SD Times.

The study also indicated that 14.2 percent intend to begin developing using Java within the next six months, and 14.9 percent within the next six to 12 months; this compares with 15.1 and 12.7 percent, respectively, in the November 2001 study. More than one-fifth of respondents—21.0 percent—

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## Vultus Puts Web Face on Enterprise Apps

'Zero-client' solution uses HTML, XML, JavaScript to present GUI

BY EDWARD J. CORREIA

In the shadow of headlines grabbed by Curl Corp. for its fat-client Web-app execution solution, a company called Vultus Inc. was quietly developing the WebFace Solution Suite, a set of tools released in August that permit developers to create distributed enterprise applications accessible from a Web browser without the need for plug-ins or Java, and with what the company calls a zero-client download.

According to Bruce Grant, chief architect at Vultus (www.vultus.com), a solution that

requires special client-side software will ultimately fail. "Developers have backed away from applets because they were slow, didn't work and gave you client/server-like maintenance

problems. They backed away from plug-ins because IT is sick and tired of anything being installed on a computer because of upgrade issues," said Grant,

> continued on page 24



WebFace offers event-driven development, like Delphi, Java Swing or Visual Basic.

## .NET Update Will Focus On Mobility

Versions of VS.NET, Framework to offer incremental improvements

BY ALAN ZEICHICK

The emphasis of Microsoft Corp.'s revisions to its Visual Studio .NET development tool and .NET Framework runtime, due to appear simultaneously with the general availability of Windows .NET Server before the end of the year, will be on support for mobile clients within VS.NET. However, the company has made other changes to .NET.

When describing these

changes, Microsoft VS.NET product manager Chris Flores contradicted statements by John Montgomery, another product manager at Microsoft, that were reported in the Aug. 15 issue of SD Times. Montgomery had stated that the only changes to VS.NET 1.1 would be bug fixes, and there would be no new features or specifications in the new release. Both Flores and Mont-

> continued on page 24

### Developer Tools Road Map 2002-2004

Visual Studio "Everett"	"Visual Studio for Yukon"	"Visual Studio for Longhorn"
Windows .NET Server integration	SQL Server integration	Windows "Longhorn" integration
Support for .NET Compact Framework and device development	Improved IDE productivity and community support	New UI tools and designers
Improved performance	Extended support for XML Web services	Extensive managed interfaces
	Office programmability	

Microsoft maps its tools through the next version of Windows.

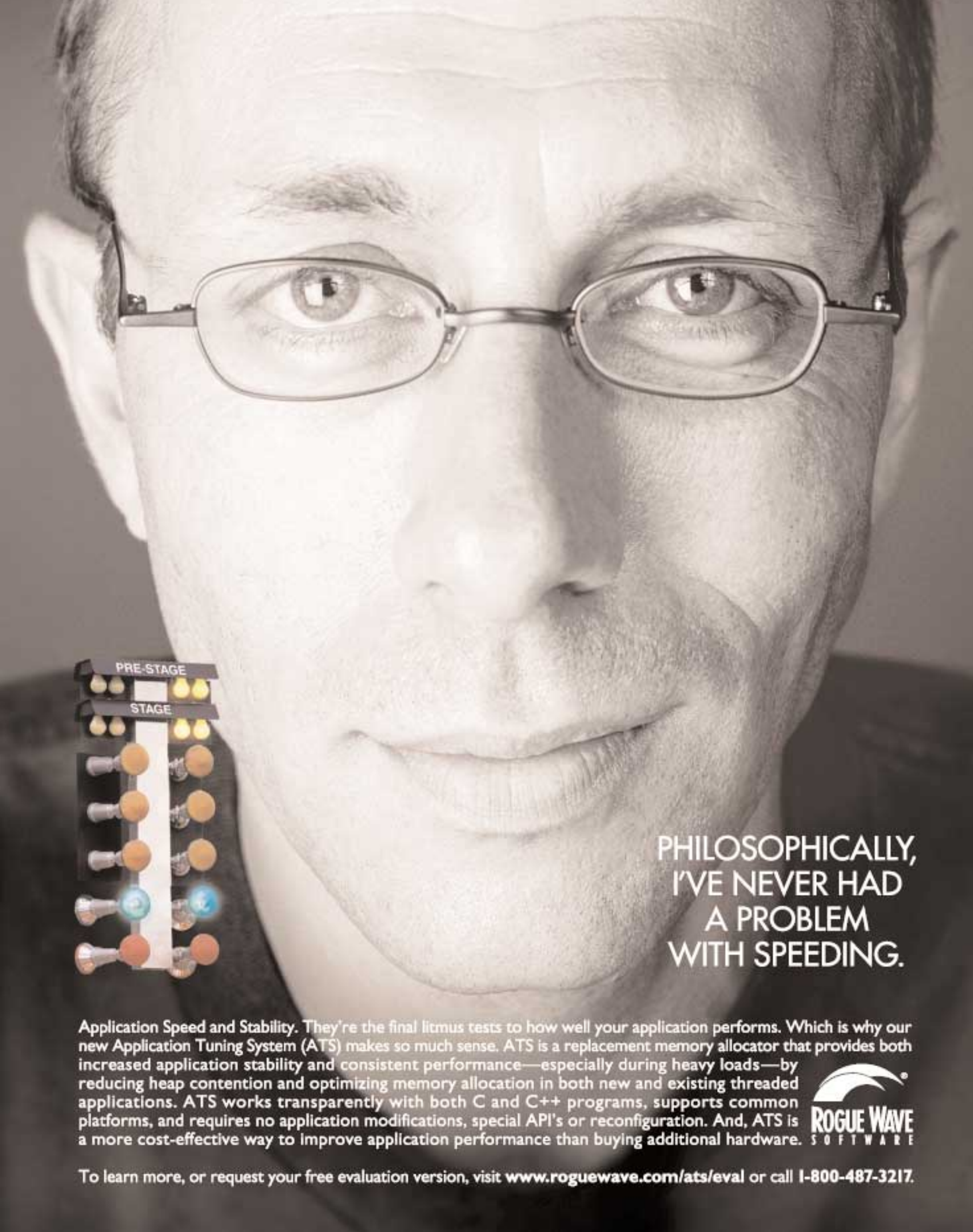
## CALDERA TAKES SCO NAME, WILL STAND BY LINUX

BY DAVID RUBINSTEIN

It's back to the future for Caldera International Inc., which late last month announced it would drop its name and become SCO Group, reviving the brand it acquired in March 2001 with the purchase of the server software and professional services divisions of the Santa Cruz Organization. The company also unveiled a road map for product updates over the next six months.

Historically, the SCO name has been tightly associated with Unix, but Opinder Bawa, senior vice president of technology, was not worried that customers might infer that the former Caldera is in any way shifting away from Linux. The name change, Bawa said, "is a recognition that we're a Unix and Linux company. I would emphatically

> continued on page 22



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# MKS Adds Federation to Source Integrity

## Update provides content caching for developers in remote locations

BY ALAN ZEICHICK

Citing a need to improve its software's performance for widely dispersed development teams, MKS Inc. has released an upgrade to its Source Integrity Enterprise Edition software configuration management server. The company also has enhanced its Integrity Manager workflow and process management system.

The biggest change with SIEE version 8.3, expected to ship mid-September, is the implementation of what MKS (www.mks.com) calls its "federated server architecture," according to Dave Martin, vice president of product development, which provides local caching of source files and other artifacts in remote locations, or in other cases where the connection between developers and the primary repository has high latency or limited bandwidth.

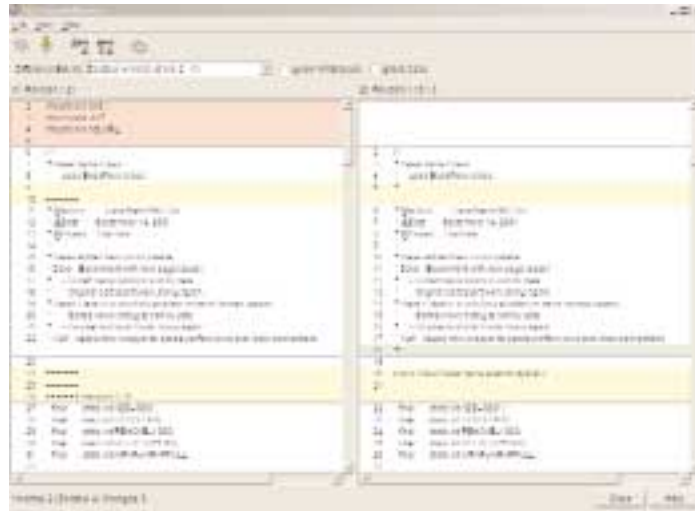
"Developers may not necessarily want a replicated solution," said Martin, "because there's high [administrative] costs associated with that. The federated server architecture provides a reliable caching mechanism between locations that gives remote development teams the high performance they need, but without using replication technology, which can often result in pretty high conflict-resolution management requirements."

Martin described the change-management system as still having a central SIEE repository in one location that stores the master artifacts, change logs and other data. Remote locations have their own SIEE server, which stores local copies of the artifacts. When a remote developer requests material from the SIEE server, the request is still authorized and managed by the central SIEE server, but if the cache is up to date, source, image and other content files are served from the local federated server. Changes to remote copies are immediately uploaded back to the central server.

"Under the federated server model, everyone knows what everyone is doing in real time," he said. "The caching technology gives everyone the performance they need over a wide-area network, but any real-time update that's being performed by any development team is instantly available to everyone else."

MKS also has added what it calls "project sharing" to SIEE, which allows one project to browse through and incorporate the latest results of a completely separate project, said Martin, who added that other vendors call this "component sharing support."

"Source Integrity, like many of the other SCM products, has



Source Integrity includes a revised visual differencing tool that's based on Java, rather than Windows.

a notion of a project, which represents a group of files that represent an application, or a portion of an application," he explained. He said that this is particularly important in situations where there is component-based development, where one project team might be building or maintaining a component, but that component is used by many other separate project teams building applications.

"They're building a common printer driver or a common payroll tax calculation algorithm that is shared across the organization," he said. "What we've done here is not only give the ability to share that project among a number of other teams, but also pro-

vide the ability to control how that project is shared."

Martin also said that with SIEE 8.3, MKS replaced the software's visual differencing tool with a Java-based version that will work on multiple platforms. It also added or improved integrations with Borland's Delphi 6, Microsoft's Visual Studio .NET and TogetherSoft's Together Control Center.

Pricing for SIEE 8.3 is 20 percent higher than previous versions. Each SIEE server costs \$8,000, "but the federated server is an additional \$2,000 because it's an add-on component," said Martin. That means, he explained, that the master server in the central location

would cost \$8,000, but those installed in remote locations would cost \$10,000. The client license is \$900 per user, for a named user license.

In addition, Martin said that Integrity Manager had been updated to version 4.4, which improved the facilities for event triggers and rule-based issue escalation. He also said that the software has an improved browser-based interface, as well as a new command-line administrative interface that provides stronger integration with other tools or custom-written content management systems.

"What people liked was that Integrity Manager was highly customizable," he said. "But they didn't like that there wasn't a lot of process automation behind it, especially in organizations that wanted the system to react based on information being submitted into the change management system—our product was strangely devoid of all of that. What we've done is added an event trigger that's similar to what existed in Source Integrity. It gives the customers the ability to define an event, and based on the event happening in the system, define what they want done in the tool."

Pricing for Integrity Manager is the same as for SIEE, at \$8,000 per server and \$900 per named user. z

# Documentum 5 Adds Developer Hooks

## Content management server tightens integration with J2EE

BY ALAN ZEICHICK

Documentum Inc. is putting software developers front and center with a new Business Objects Framework, included in version 5 of its eponymous enterprise content management platform, which was due to ship on Sept. 10. The new framework opens up the Documentum platform to developers more than previous versions did, and allows them to embed application logic within the platform itself.

With Documentum 5, said Lubor Ptacek, director of product marketing, the emphasis is on ease of development of content applications. "We always had a common API across all the content services, and a sin-

gle repository and a set of services exposed through that common API. We have created a new layer for developers, called Business Objects Framework, which lets you move some of the application logic from specific applications into Documentum itself, so the logic can be reused by many different applications," Ptacek said.

"We've specialized in managing unstructured content, like documents, spreadsheets and videos," as opposed to structured rows-and-tables data that appears in databases," he said. "Ten years ago, companies standardized on a single database platform to allow applications to take advantage of that

platform. It makes a lot of sense to do that with unstructured content" with Documentum 5.

To be a true platform, continued Ptacek, the company (www.documentum.com) has to allow developers to take advantage of its content management system. "Once we start talking about a platform, it means that not just our own developers, but also developers at customers, systems integrators, ISVs and so on" can access the system. That represents a change from previous versions of Documentum, which was a more closed system. Now the company will be providing a wider range of APIs and tools for linking Documentum to external applications.

Ptacek said that developers can build four different types of apps on Documentum: apps running on the content management server itself, by creating custom methods and services; Web applications running on a J2EE application server, which connects via a JDBC connector in a Web Development Kit provided by the company; desktop apps, where the client's IT department writes or customizes a local Documentum client using a Desktop Development Kit; or through an interface to a portal using Documentum's Portal Integration Kit.

"With Documentum 5, we are moving all of our products onto J2EE," claimed Ptacek. "Like any company in this space four or five years ago, we had to develop a proprietary application server because J2EE wasn't around, so we had our own

clients running on this proprietary application server. With version 5, we are completely redoing that, and all of the clients are embracing J2EE."

The new version also includes 172 prewritten components that customers can use without royalty, he added. "Where we make money is on selling the platform. We don't want to make money on the developer, but once you write an application and start selling it to customers, these customers will need to buy the platform underneath from us."

Pricing for Documentum 5 was not ready for disclosure, said Ptacek, but he said that it wouldn't be dramatically different than that for Documentum 4. With the older version, he said, a typical installation costs about \$300,000 to \$350,000. "That's the deal size, not the product price," he said. z

## News Briefs

## COMPANIES

**Sun Microsystems Inc.** has established a program to help not-for-profit open-source developers license Java compatibility suites. This \$3 million program was announced at JavaOne last March, largely to accommodate the **Apache Software Foundation**. The program will be managed by Sun's Rob Gingell, chairman of the Java Community Process; Apache's Ben Laurie; and Doug Lea, professor of computer science at State University of New York at Oswego. . . . **McObject LLC** and **QNX Software Systems Ltd.** have partnered to bring out a version of McObject's ExtremeDB in-memory database for QNX's Neutrino real-time operating system. . . . **Starbase Corp.** and **TogetherSoft Corp.** have announced a joint development plan to integrate TogetherSoft's ControlCenter development environment with Starbase's CaliberRM requirements-management software and StarTeam version-control software.

## PRODUCTS

**GreenPoint Inc.** has released a .NET version of WebCharts3D data-visualization component. The new component, called **WebCharts3D.NET**, runs inside Visual Studio .NET. Other versions of the component are available for COM and Java. Pricing starts at \$750 per developer seat and \$1,350 for a single-processor production server license. . . . **Microsoft Corp.** has released its **SQL Server 2000 Notification Services** as a no-cost add-in for the database server. . . . **Cleanscape Software International Inc.** has updated its **LintPlus** static analysis tool for C source code. Version 5 includes a new GUI, more features for embedded development, new reporting options and



cross-platform support for Linux, Unix and Windows applications. New reports include a call tree report, a symbol table cross reference, an include file tree report and a C

function report. LintPlus is priced at \$2,490 for Linux, \$3,990 for Unix and \$1,290 for Windows. . . . **eHelp Corp.** has new editions of its **RoboHelp 2002** documentation suite localized for Chinese, Japanese and Korean. Prices range from \$999 to \$1,199, depending on the language. . . . **E-Botz Inc.** is offering a preview version of its **NQL 3.0**. NQL, or Network Query Language, is a server-side scripting language; the new release focuses on new tools for XML, including translation, interoperability and Web services. The Vancouver, British Columbia-based E-Botz purchased the bankrupt NQL Inc. in February 2002 for \$250,000. . . . **ObjectVenture Inc.** has released an update to its **ObjectAssembler** graphical development tools for J2EE applications. Version 2.0.2 includes a new Java interface component, home methods for entity beans, improved code generation from patterns and a new browser-based installer. . . . **Codagen Technologies Corp.** has released a version of its **Codagen** UML-based workflow development tool for Microsoft's BizTalk Server. . . . **Starbase Inc.** has updated **CaliberRM**, its requirements management system, to work with multiple glossaries. Version 4.1's SDK also now allows bidirectional integration with other tools, and supports .NET for reading and writing external data, in addition to COM and Java. . . . **Sims Computing Inc.** has updated its **Flux** scheduling component for Java. Version 3.5 allows for file-driven jobs, which trigger events when files are created, deleted or modified. . . . **BEA Systems Inc.** has released 30 new integration adapters for its **WebLogic** J2EE application server, covering applications such as Oracle, PeopleSoft, SAP R/3 and Siebel; industry-specific formats such as HIPAA, FIX and SWIFT; general interfaces such as SMTP, FTP and HTTP; and for other message-queuing systems. . . . **Rational Software Corp.** has integrated its **Test RealTime** analysis tool with Texas Instruments Inc.'s **Code Composer Studio** development environment for DSP-oriented applications. Rational also has partnered with Object Mentor Inc. to release an **XP Plug-in for RUP**, that is, an Extreme Programming plug-in for the Rational Unified Process. . . . **Parasoft Corp.** has announced that its **Jtest** automated unit testing software for Java can be integrated into Borland's **JBuilder 7.0** development environment. Jtest sells for \$3,495 per seat. . . . **DbQuikSite Pro 2.0** is > continued on page 12



# InterSystems Tackles Bit-Map Storage Problem

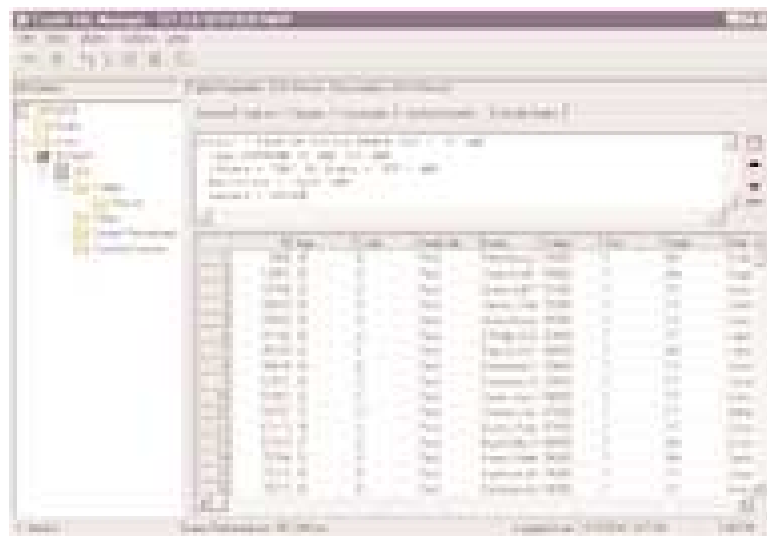
## Claims Caché 5 is 200 times faster than Oracle

BY EDWARD J. CORREIA

Bit-map indexing is an accepted method of accelerating retrieval of warehoused data. But for updating that data, the bit-map indexing is too slow. Not anymore, according to database developer InterSystems Corp., which later this month will release Caché 5, the newest version of its relational database management system that the company claims can store and retrieve bit-map data and perform real-time analytics in transaction processing environments.

According to Paul Grabscheid, vice president of strategic planning at InterSystems (www.intersystems.com), the performance acceleration factor for bit-map index data retrieval applies inversely to storage. "If a bit-map index improves search performance by a factor of 10, then storing updates will be 10 times slower," he said.

It is this reality, Grabscheid said, that has prevented companies from performing data analysis in real time. "Typically, people peel data from their systems and put it into warehouses where they do their analysis weekly or monthly." Real-time analysis becomes important, he said, when an organization is attempting to spot a trend, such as the health-care industry monitoring an outbreak of disease. "West Nile [Virus] is hot right now, and people are trying to prevent rapid spread. What we've spent the last two years figuring out is how to make bit-map search performance acceptable. When benchmarking query and update performance of Caché compared to Oracle on a 10 million row table, Caché ran more than 200 times faster."



Data that has been bit-map indexed still can be retrieved using SQL.

Caché 5 also adds XML and SOAP support to C++, Java and COM supported in previous versions. The benefit here, Grabscheid claimed, is that Caché methods and queries can be exported as Web services. "Think of [XML and SOAP] as different ways of exposing the same Caché objects." He also claimed a competitive edge in that no dedicated application server is required. "The way you get Web services with Oracle is to buy their app server, which they are desperate for you to buy. And with Microsoft, you install a gigabyte of code and hope that everything still works. With Caché, you don't need to buy a new server. Caché also provides the WSDL and handles the SOAP messages coming in."

Also new, according to



Caché 5's Web services don't require purchase of an app server, says InterSystems' Grabscheid.

Grabscheid, is the ability to automatically create, test and deploy Enterprise JavaBeans. "Our objective was to make development of EJBs easier by taking your Java classes and converting them into EJBs. Caché also automates deployment and testing of beans that use either container- or bean-managed persistence." Out of the box, Caché 5 will support BEA's WebLogic and the JBoss open-source app server, with WebSphere planned by the end of this year, he said.

Caché 5 for Linux, Unix and Windows is scheduled to begin shipping on Sept. 23, at a single-user price of \$200, and \$1,000 for the multiuser version. z



A new Web services wizard exposes any Caché object.



WebSphere. software

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## JAVA STUDY

< continued from page 1

now say that they do not intend to be using Java within the next year. When asked the same question last November, 19.6 percent gave that answer.

The remainder of the study was tabulated across only those who indicated that they were either using Java within their organization today, or intended to begin doing so within the next year.

### STATE OF DEPLOYMENT

The study asked those who are using or intend to use Java to describe the state of Java deployment within their organizations. Of those, 37.4 percent indicated that it's been deployed for one or more critical enterprise applications; 17.2 percent said that Java has been deployed for applications, but not critical ones. Another 16.8 percent said that Java applications are under development, but have not yet been deployed. A further 24.6 percent said that Java is being evaluated, or is being used in experimental or pilot projects.

Java is not being used in a vacuum in pure shops, according to most respondents: Only

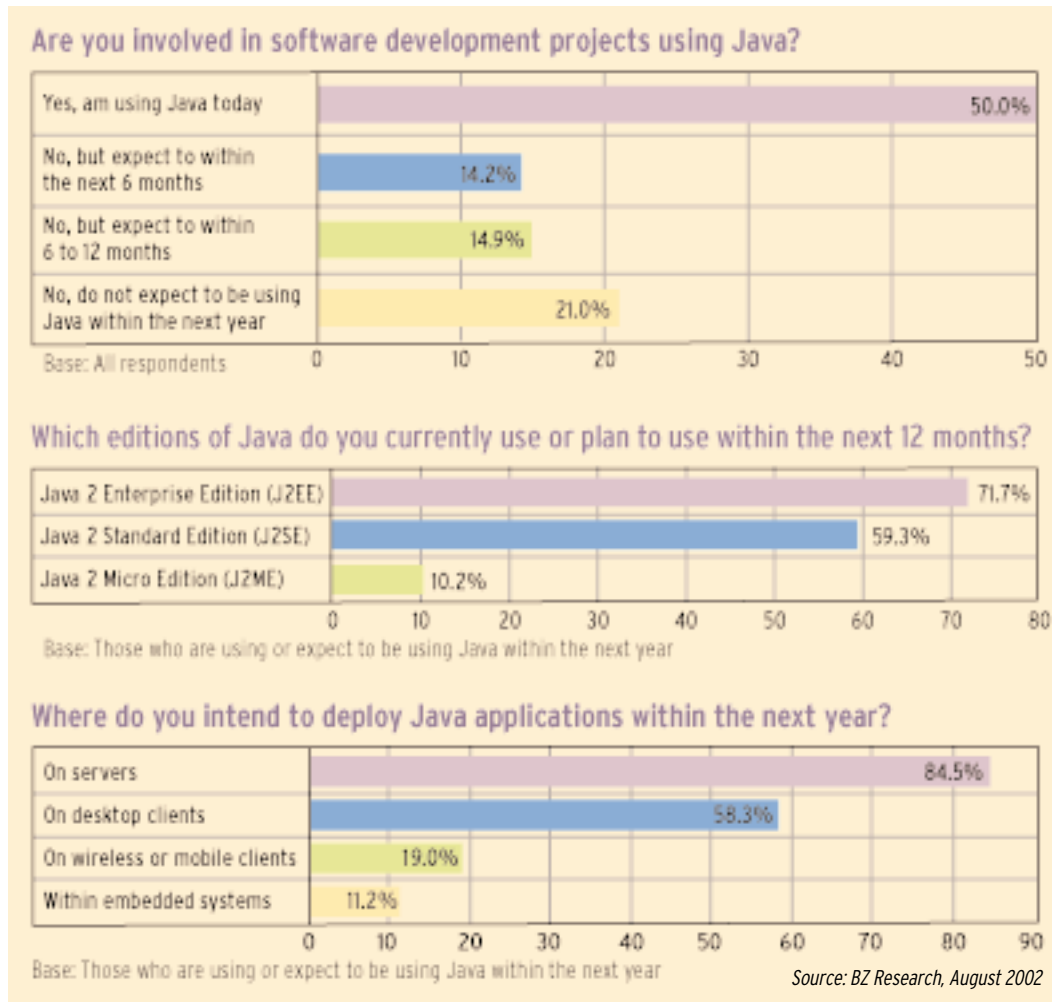
24.9 percent, or roughly one-quarter, said that their organizations were not developing for Microsoft's Win32 or .NET platforms at all. A larger group, 63.3 percent, said that they were also building Win32 applications, and 35.1 percent said they were building .NET applications.

### SPECIFIC TECHNOLOGIES

Among those who are using or plan to use Java, the study found a much higher uptake of Java 2 Enterprise Edition and Java 2 Standard Edition, and a slight decline in the use or planned use of Java 2 Micro Edition.

In the August study, 71.7 percent of respondents said they would be using J2EE; that compares with 63.5 percent a year earlier. For J2SE, the current study shows 59.3 percent usage, up from 46.6 percent in November 2001. Use or planned use of J2ME declined from 12.0 percent last fall to 10.2 percent currently.

The current J2EE/J2SE/J2ME numbers correspond with a question that asked where the Java applications would be deployed. The August study showed 84.5 percent of Java developers plan to deploy applications on servers, 58.3



percent on desktop clients, 19.0 percent on wireless or mobile clients, and 11.2 percent within embedded systems. The responses for servers and wireless

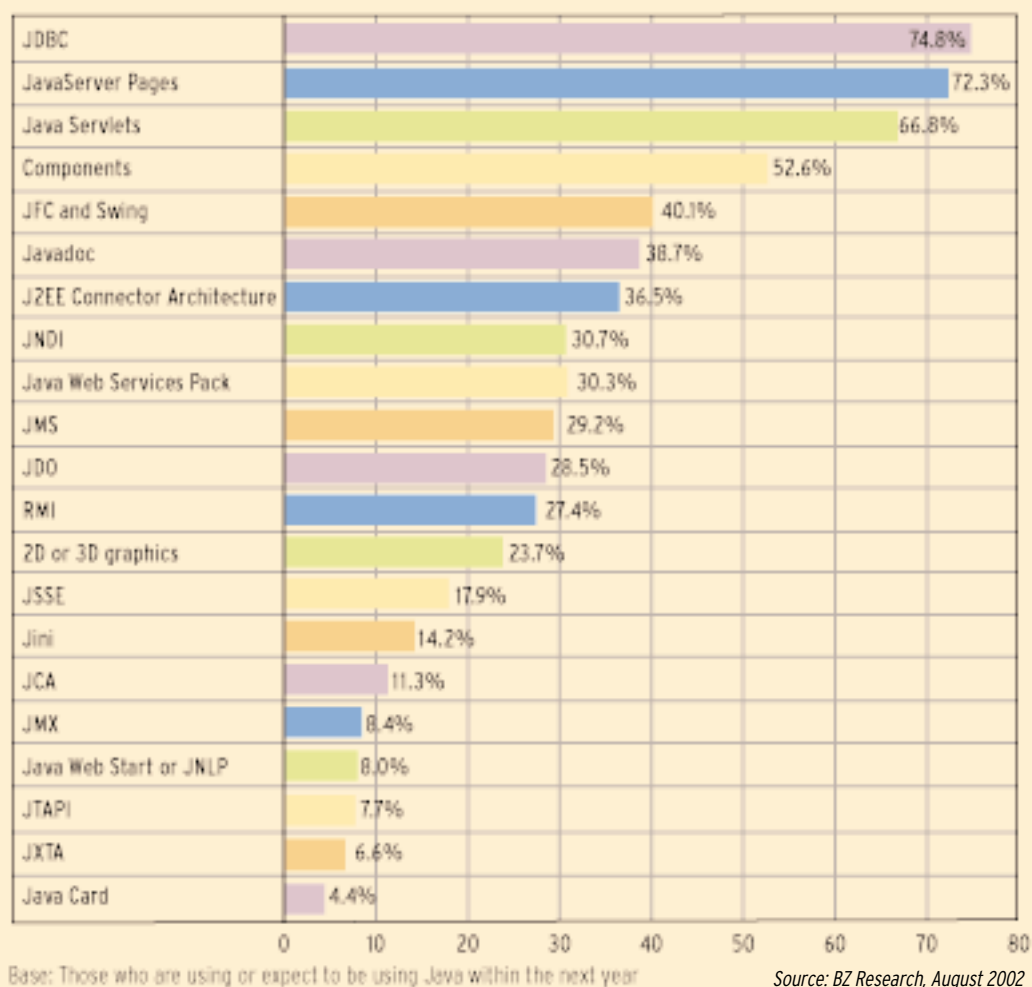
would be higher than J2EE and J2ME would indicate, because J2SE can be used in both of those environments.

Java-oriented respondents also were asked to indicate which specific Java technologies they were using or intending to use. The most widespread were server-oriented specifications such as Java Database Connectivity (JDBC), at 74.8 percent of respondents; JavaServer Pages at 72.3 percent; Java Servlets, at 66.8 percent; and components, including JavaBeans and Enterprise JavaBeans at 52.6 percent.

Several newer specifications came in toward the middle of the pack. J2EE Connector Architecture was selected by 36.5 percent of the respondents, Sun's Java Web Services Pack by 30.3 percent, and Java Data Objects (JDO) by 28.5 percent.

The least-used Java technologies were Java Management Extensions (JMX) at 8.4 percent; Java Web Start and Java Network Launch Protocol (JNLP) at 8.0 percent; Java Telephony API (JTAPI) at 7.7 percent; Java peer-to-peer computing (JXTA) at 6.6 percent; and Java Card smart cards at 4.4 percent. z

### Which Java APIs or other technologies do you currently use or plan to use within the next 12 months?



Source: BZ Research, August 2002

## MORE MIXTURE IN JAVA

Both BZ Research's August 2002 Java Awareness Study and an earlier June 2002 Windows and .NET Awareness Study asked developers (on those respective platforms) if emerging XML and Web services will affect their organization's choice of development and deployment platforms. It appears that Java developers think about a more heterogeneous world than Windows developers do.

Within the group of Java developers, the largest group, 40.6 percent, said that these technologies would encourage a mixture of Windows/.NET,

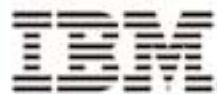
Java/J2EE and other platforms, while 29.9 percent said that the technologies would drive them to standardize on Java and J2EE. Only 6.6 percent said that XML and Web services would drive them to standardize on Windows and .NET.

In the June study's pool of Windows and .NET developers, substantially fewer—27.7 percent—said that XML and Web services would encourage a mixture of platforms. Also, 26.5 percent said that these technologies would drive them to Windows and .NET, and 17.9 percent said they'd be driven to standardize on Java and J2EE.



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# Catalyze Overcomes Failure to Communicate

BY DAVID RUBINSTEIN

Claiming that failure to communicate is the root cause of software development failures, SteelTrace Ltd. next month will release a beta of a more process-oriented version of its

requirements capture tool, called Catalyze Process Solo.

According to Fergal McGovern, chief technology officer at the 1 1/2-year-old Dublin, Ireland-based tools vendor ([www.steeltrace.com](http://www.steeltrace.com)), the new prod-

uct allows developers and business people to manage and capture requirements for use in workflows that can be created graphically, in a tool such as Visio's, or written textually and imported into Process Solo,

which would automatically make the change in the graphical view. This way, he said, both technical and nontechnical people can be involved throughout the project development life cycle in ways they understand.

"It gives flexibility in how you slice and dice the data," McGovern said. "It provides structured capturing of requirements, and is more interactive than throwing a 180-page requirements book over the wall and crossing your fingers six months down the road."

Within Process Solo, developers can generate a Microsoft Word document showing the requirements and flow for business people, who can then note changes in the Word file for importing back into the original project, he explained. Project changes can be tracked and audited within the tool, meaning users won't have to purchase separate version control or reporting tools, McGovern added. Process Solo ships with eight prewritten profiles for report generation. Users can get a thumbnail view of either the requirements documentation or the graphical model that can be drilled into for a view of a specific area, he said.

Process Solo is written in Java and communicates with SQL-compliant databases using JDBC, he said. The product uses XML Metadata Interchange to communicate with UML modeling tools, and can be integrated with TogetherSoft's Together Control Center and Rational's Rose. Files can be stored locally in XML using standard tools from the Apache Software Foundation, he added.

Process Solo is the third product to be released by the company this year. In February, it launched Catalyze Solo, which CEO Tara O'Sullivan explained was focused more on requirements and less on business process, and then in March it released Catalyze Collaborate, a team capture tool.

O'Sullivan emphasized the ease of use of Process Solo, admitting that many development shops do not use modeling and requirements management tools because they are rigid and complex. "The tool should be an enabler to help you work in more efficient ways," she said. "We don't want to impose a huge new learning curve on users." O'Sullivan said developers interested in becoming members of the beta program can contact Sharon Kiernan at [skiernan@steeltrace.com](mailto:skiernan@steeltrace.com). Pricing has not yet been established. z

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**ALAN ZEICHICK: Conference Chair**

Alan Zeichick, co-founder and editor-in-chief of *SD Times* and a columnist for *Red Herring*, began his career as a mainframe systems analyst and developer. Since 1984, he has written nearly 2,000 articles for dozens of technical and industry publications and is in frequent demand as a speaker at such events as Comdex, the World + Interop, PC Expo, Software Development Conference, IBM Technical Interchange, and JavaOne.



**LARRY O'BRIEN**

Larry O'Brien, founding editor of *Software Development Magazine*, has been described by software engineering legend Larry Constantine as "the best technical manager I've ever met." The well-read author of hands-on articles on leading-edge technologies, O'Brien recently served as lead architect for a series of J2EE-based Web services projects, and used the .NET Framework as the basis of his latest patent application. A popular instructor at development conferences, his latest book is "Thinking in C#."



**ANDREW BINSTOCK**

Andrew Binstock, principal analyst at Pacific Data Works, is an expert on technologies ranging from Web services to middleware to programming languages. Today, he works with corporate clients and contributes *SD Times'* Middleware Watch column; previously, he served as a senior technology analyst at PricewaterhouseCoopers, as editor of *UNIX Review*, and as founder of *The C Gazette*. His best-selling "Practical Algorithms for Programmers" is currently in its 12th printing.

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**October 1-2**

**New York City  
Jacob K. Javits Convention Center**

### **Tuesday, October 1**

9:00-11:00: The Mechanics of  
Web Services: SOAP and XML

11:15-12:30: Making Web Services  
Scalable and Secure

1:30-2:45: Bridging the Standards Gap:  
Linking Incompatible Web Services

3:00-4:30: Building and Deploying  
Web Services on .NET

### **Wednesday, October 2**

9:00-11:00: The Mechanics of  
Web Services: WSDL, UDDI, and WS-I

11:15-12:30: Enterprise Integration  
Technology Using Web Services

1:30-2:45: Tools and Frameworks for  
Building, Testing, and Deploying Web Services

3:00-4:30: Building and Deploying  
Web Services on Java/J2EE

produced by  
SD Times at  
Internet World Fall

**SDTimes**  
THE INDUSTRY RESOURCE FOR SOFTWARE DEVELOPMENT



**INTERNET WORLD**  
Fall 2002



# Eiffel Plugs Language Into VS.NET

BY ALAN ZEICHICK

Eiffel Software Inc., a developer of tools and compilers for the Eiffel programming language, is preparing to release a version of the language, called Envision, to plug into Microsoft's Visual Studio .NET integrated development environment. The company also is preparing an upgrade to its stand-alone EiffelStudio IDE. Both are set to be released on Sept. 15.

Eiffel, an object-oriented language developed by company founder Bertrand Meyer, introduced the concept of Design by Contract-based development. The language often is used in universities to teach computer science, and was initially created for that purpose by Meyer, who is also chairman of the software engineering department at ETH, the Swiss Federal Institute of Technology in Zurich,

Switzerland. His company was called Interactive Software Engineering until changing its name in June.

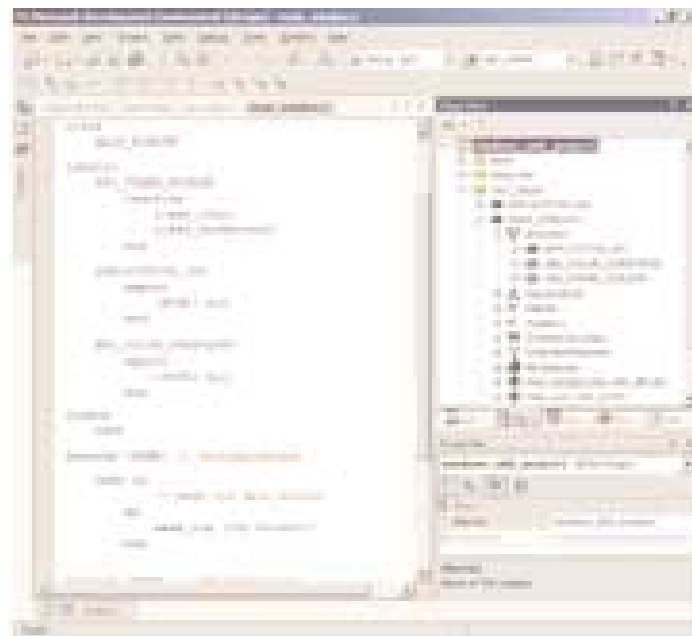
According to Chris Ambarian, vice president of the company (www.eiffel.com), Eiffel was one of the first non-Microsoft language providers to pledge support for .NET, releasing a .NET-compliant version of EiffelStudio in December 2001. The new Envision 1.0 compiler plug-in for VS.NET, priced at \$999 per developer, is for Eiffel language developers who would rather use Microsoft's IDE than the EiffelStudio IDE, Ambarian explained.

With the forthcoming EiffelStudio 5.2, Ambarian said, the compiler has been improved and there are new development tools within the IDE. "We're beginning to talk about [EiffelStudio] as an Eiffel

development framework," he said, "meaning that it's the methodology, in general, of object-oriented software engineering, it's a compiler that supports the methodology, it's an IDE and all the tools that go along with it, and it's a number of other resources, including training classes and providing consultants."

Within the updated EiffelStudio, claimed Ambarian, debugging and class browsing, which he described as "already the best in the world," have been improved, along with runtime performance of Eiffel applications. "It's now on par with C in terms of speed," he said.

The new version of EiffelStudio also allows for new .NET features not covered in the previous release, such as multiple inheritance, generics and precompiled libraries. The



Envision provides the Eiffel language compiler within Visual Studio .NET.

debugger allows dynamic evaluation of expression and conditional breakpoints, and detects stack overflows. The IDE also includes a new multiplatform object-oriented graphical library, called EiffelVision.

EiffelStudio is priced at \$4,799 per developer seat, and is available for Linux, Unix, VMS and Windows. The company will be offering a free version of both Envision and EiffelStudio for noncommercial use. z

## News Briefs

### MORE PRODUCTS

< continued from page 4

an HTML/ASP generating tool from DevShop Ltd. that builds Web pages directly from databases using ADO or ODBC. The new version allows each page to have its own headers, footers and color scheme, and ASP controls can contain custom user-interface controls. The new release also updates the ADO connection when publishing to a remote server. DbQuikSite Pro costs \$179 and runs on Windows . . . Harry von Borstel Computing has updated its **Blueshell Active Tables** custom control for ActiveX and .NET. Version 3 allows both English and German development, and can serve as a .NET data source. The component costs \$250 per developer.

### PEOPLE

BEA Systems Inc. has hired **Olivier Hellboid** as president; previously, he was president and CEO of Rainfinity and general manager of HP's OpenView Business Unit. He takes the president title from BEA's co-founder and CEO, **Alfred Chuang**, who was promoted to chairman, succeeding co-founder **Bill Coleman**, who will remain on the board of directors . . . **Laura Merling** is the new executive director of Software Development Forum, an independent not-for-profit software industry entrepreneurs' forum in Silicon Valley. She most recently served as VP of marketing at Intershop Inc., and replaces **Sandy Herz** . . . The not-for-profit Project Management Institute has named **Gregory Balestrero** as its new CEO, replacing **Virgil Carter**.

### STANDARDS

Sun Microsystems Inc.'s Java Community Process has released a public review draft of **JSR-110 Java APIs for WSDL**, and proposed final drafts of **JSR-115 Java Authorization Contract for Containers**, **JSR-153 Enterprise JavaBeans 2.1** and **JSR-154 Java Servlet 2.4** . . . The SALT Forum has submitted its **Speech Application Language Tags** specification to the W3C . . . The W3C has released working drafts of new **Quality Assurance Framework Specification Guidelines**, **Web Content Accessibility 2.0**, **XForms 1.0** and **SOAP 1.2 Attachment Feature**. There also are new working drafts of **XSL Transformations 2.0**, **XPath 2.0**, **XML Query Use Cases** and **XQuery 1.0**. z

# SD Times to Premiere Web Services Conference

## 'How-to' sessions designed to get developers started

BY CHRISTINA M. PURPI

SD Times, published by BZ Media LLC, is launching its first event, the Web Services Development Conference, co-located with Penton Media Inc.'s Internet World, to provide developers with the practical knowledge required to get applications built with Web services.

Scheduled for Oct. 1-2 at the Jacob K. Javits Convention Center in New York, the vendor-neutral conference will guide both Java and Microsoft developers through eight how-to and hands-on sessions. With registration, conference attendees will receive access to Internet World's expo floor and keynote lineup.

SD Times' Alan Zeichick, Larry O'Brien and Andrew Binstock will instruct and moderate informative sessions such as "Bridging the Standards Gap: Linking Incompatible Web Services" and "Tools and Frameworks for Building, Testing and Deploying Web Services." Zeichick is a well-known programmer, journalist and analyst and editor-in-chief of SD Times. O'Brien is the founder of Game Developer magazine and editor-in-chief of AI Expert magazine, and Binstock is the principal analyst at Pacific Data Works LLC.

Also part of the program are in-depth sessions on building and deploying Web services with .NET, taught by Keith Pijanowski, .NET developer evangelist at Microsoft Corp.; and on Java, taught by Rajiv Mordani, staff engineer at Sun Microsystems Inc. z

## Web Services Development Conference

### CONFERENCE

Oct. 1-2, Jacob K. Javits Convention Center, New York

### CONFERENCE HOURS:

**Tuesday**, 9 a.m.-4:30 p.m.  
**Wednesday**, 9 a.m.-4:30 p.m.

### Internet World EXHIBIT HOURS:

**Tuesday**, 10 a.m.-5 p.m.  
**Wednesday**, 10 a.m.-5 p.m.  
**Thursday**, 10 a.m.-4 p.m.

### CONFERENCE PROGRAM:

#### Tuesday

9 a.m.-11 a.m., "The Mechanics of Web Services, Part I: SOAP and XML"  
11:15 a.m.-12:30 p.m., "Making Web Services Scalable and Secure"  
1:30 p.m.-2:45 p.m., "Bridging the Standards Gap: Linking Incompatible Web Services"  
3 p.m.-4:30 p.m., "Building and Deploying Web Services on .NET"

#### Wednesday

9 a.m.-11 a.m., "The Mechanics of Web Services, Part II: WSDL, UDDI and WS-I"  
11:15 a.m.-12:30 p.m., "Enterprise Integration Technology Using Web Services"  
1:30 p.m.-2:45 p.m., "Tools and Frameworks for Building, Testing and Deploying Web Services"  
3:00 p.m.-4:30 p.m., "Building and Deploying Web Services on Java/J2EE"

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\*Details on these analyst reports can be found at [www.telelogic.com/analyst](http://www.telelogic.com/analyst)

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# .NET Analyzer Checks C#, VB.NET Code

BY CHRISTINA M. PURPI

.NET developers can have their application source code analyzed in more than 130 tests with FMS Inc.'s new Total .NET Analyzer.

The tool, which provides analysis of both C# and Visual Basic .NET code, runs within Visual Studio .NET and checks for bugs, performance issues and standards violations. According to Dan Haught, vice president of FMS' product development team ([www.fmsinc.com](http://www.fmsinc.com)), the analyzer will go through source code at 10,000 lines of code per second.

Total .NET Analyzer checks to make sure code conforms to best practices, for example, in terms of naming conventions, security, visual styles and user interfaces.

The analyzer also checks source code against .NET standards to recommend how



The analyzer checks .NET code at 10,000 lines per second, says FMS' Haught.

developers name objects or variables, how to construct classes and which interfaces are needed for a certain type of class, according to Haught. In addition, it detects calls to non-.NET code in Visual Basic .NET and explains how to replace them with the correct VB.NET alternative.

Haught said that each of the tool's tests has full documentation that explains the category to which the problem relates. He explained that the tool presents a solution section that tells a developer how to fix the problem or suggests a work-around. For example, if developers are using an old function, it will offer the replacement .NET function, Haught said.

"Instead of doing a tedious code review where a group has to sit down and manually go through the code, [the analyzer] is completely automated," said Haught. He explained that the goal of Total .NET Analyzer is not just to do code analysis, but also to give .NET developers a tool to help them learn how to program .NET correctly.

Haught claimed that Total .NET Analyzer is one of two products in this space, with Dev-

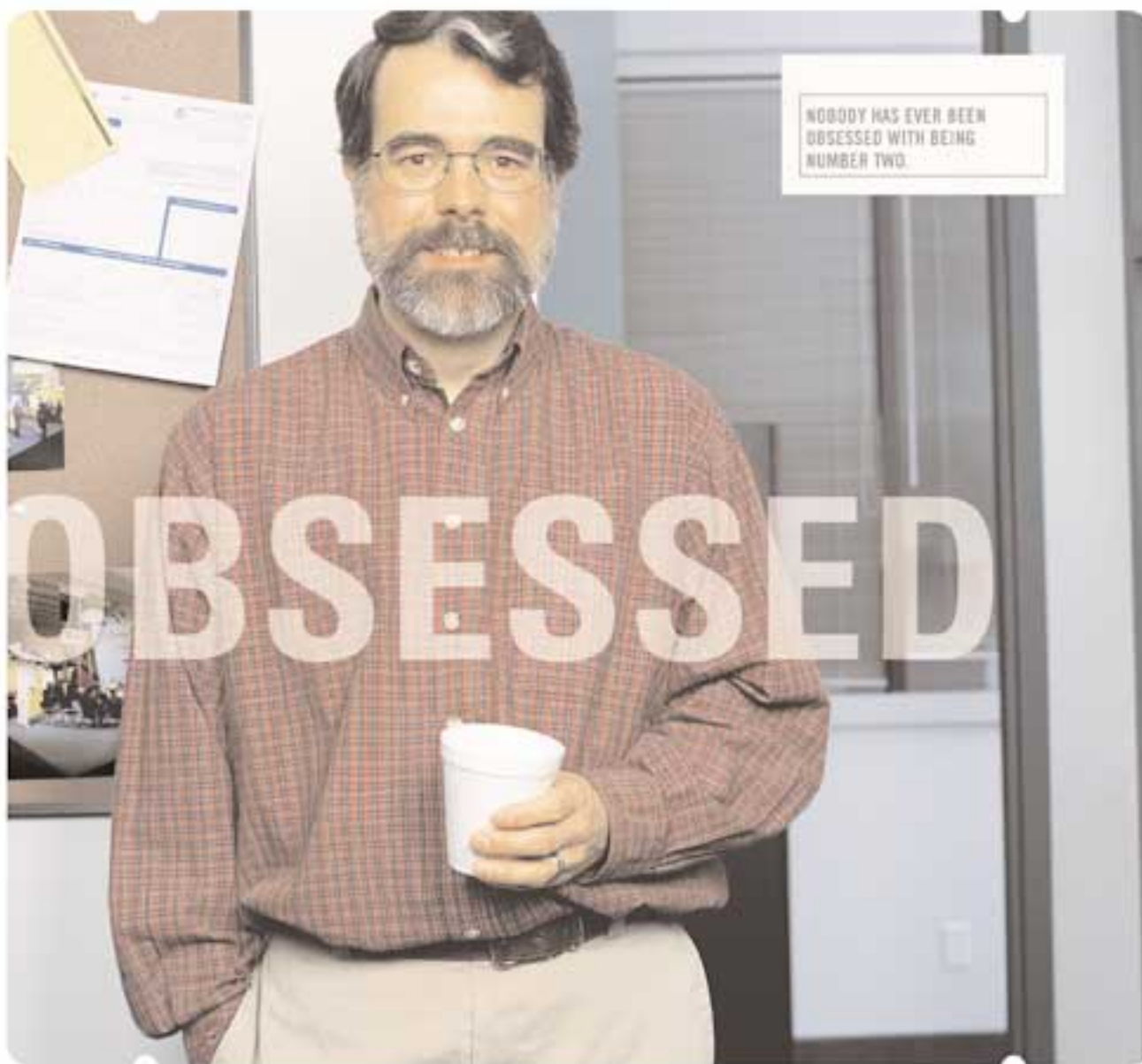
Partner Studio 7.0 from Compuware Corp. being the other. "Their analysis tool, which was also recently released, only works with a small subset of FMS' 130 tests," he said.

Total .NET Analyzer gener-

ates reports of all issues found and sorts, searches, groups and filters the issues, according to Haught. The tool sells for \$499 per developer license, with volume discounts available. z

Name	Title	Category	Severity	User Name
Assign Values	Assigning values to variables	Language	Medium	arg - 10/20/2002
Using	Using Using to ensure optimal performance	Performance	Medium	Using employee in arg - 10/20/2002
Cancel Case	Use Cancel Case for parameters, variables, and field no	Standard	Medium	arg - 10/20/2002
Following	Following can negatively impact performance	Performance	Medium	arg - 10/20/2002
Unused Field	The field is not being used	Unused	Medium	arg - 10/20/2002

Behind each issue is an explanation of the problem, along with a solution.



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# Groove Accommodates VS.NET

Developers can write Windows Forms plug-ins for Groove Workspace

BY ALAN ZEICHICK

Groove Networks Inc., a maker of collaboration software, has announced a version of its Groove Toolkit for Microsoft's

Visual Studio .NET development environment.

Groove provides a peer-to-peer collaboration system that provides instant messaging,

shared workspaces, group calendaring, business forms, on-line meetings and file sharing. Groove already has offered developer kits to allow Visual

Basic C++ and JavaScript applications to create add-in applications to Groove Workspace.

The new .NET add-in, currently available as a beta version,

lets developers write Windows Forms add-ins for Groove Workspace using Visual Studio .NET. (Microsoft is a minority investor in Groove Networks Inc.)

Groove Toolkit for Visual Studio .NET will be offered at no charge as part of the Groove Platform Development Kit, or can be downloaded from [www.groove.net/developers/dotnet](http://www.groove.net/developers/dotnet).

The company also updated its Groove Workspace client to version 2.1, which not only accommodates the new Windows Forms plug-in, but also allows integration with IBM's Lotus Notes databases and discussion boards. The client software costs \$49 per user. z



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## Corda Brings .NET Capability To PopChart

BY CHRISTINA M. PURPI

Corda Technologies Inc. is bringing its Java-based graphics tool and server to .NET developers, using a new C# API that the company is making available at no charge.

According to CEO Neal Williams, the new API, which he calls a .NET embedder, lets Web developers incorporate dynamically created charts into .NET applications or Web pages, by leveraging a Corda PopChart chart server installed locally within the enterprise.

The price for the server ranges from \$1,000 for a development license to \$6,495 for an enterprise deployment server, depending on the feature set required. The high-end offering includes SSL-based graphics creation, and output in EPS and Adobe's Portable Document Format files, in addition to static bit-mapped charts in GIF/PNG, Flash animation and SVG.

Corda ([www.corda.com](http://www.corda.com)) is also offering a no-charge .NET component that can be incorporated into Microsoft's Visual Studio .NET and used to communicate with the C# API. During the development phase, said Williams, the component and embedder can use a PopChart server installed at Corda to prototype the application, but a local PopChart server must be used for production deployments. Williams said that enterprises also can arrange with Corda to use its hosted server for deployments. z



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# Crystal Reports Gets Support for Java

## New version's feature delivers data to WAP devices, Office documents

BY EDWARD J. CORREIA

With the release late last month of Crystal Reports version 9, Crystal Decisions Inc. has added

Java support to its database-reporting software, adding to the .NET and COM programming models of past versions. Also

starting with version 9, developers will be able to purchase a .NET-compatible version directly from the company; previous

versions were available only as bundles from Microsoft Corp.

According to Tony Wind, CTO of Crystal Decisions (www

.crystaldecisions.com), Java functionality is delivered as Enterprise JavaBeans and Java libraries that work with a developer's own tools. "Wherever developers choose to develop, they can get all the power of [our] report engines through Java interfaces," he said.

Another significant change, according to Wind, is the addition of Report Parts, which he said gives developers the ability to select specific portions of report data for presentation. "They can pick out a part of a report, like a chart or a number, and embed it into their Web page for sales [people] to watch revenues, for example, or for people to watch projects. Users can then drill into those parts and [retrieve] the underlying data."

Wind said that the Report Parts capability also provides an additional benefit: the ability to pinpoint relevant data and deliver it to WAP-enabled mobile devices. "You can mark off part of a report, and either publish it to a Web page or export it to WML, and then publish it to a device," he said. He added that developers also can use Report Parts to publish data to Microsoft Office documents. "These parts can also show up inside a Word or Excel document, and they are live and can be navigated." The alternative for publishing to Office documents, he said, is wading through Microsoft's methods, which he said are complex.

Also new with version 9 is a middle-tier report application server, which Wind said can give end users an easy way to find and modify reports without the need for local client software. "We've moved much of what was on the client to the middle tier. Now you can program to this report application server and get all the services you need to manage objects and reports, set parameters, set and customize specialized viewers and have a zero client app. In addition, Wind said the report creation APIs are available, giving users the ability to program an "ad-hoc application and deliver it over the Web."

Crystal Reports 9 is available now in multiple versions, ranging from \$195 to \$1,995 per developer seat. z



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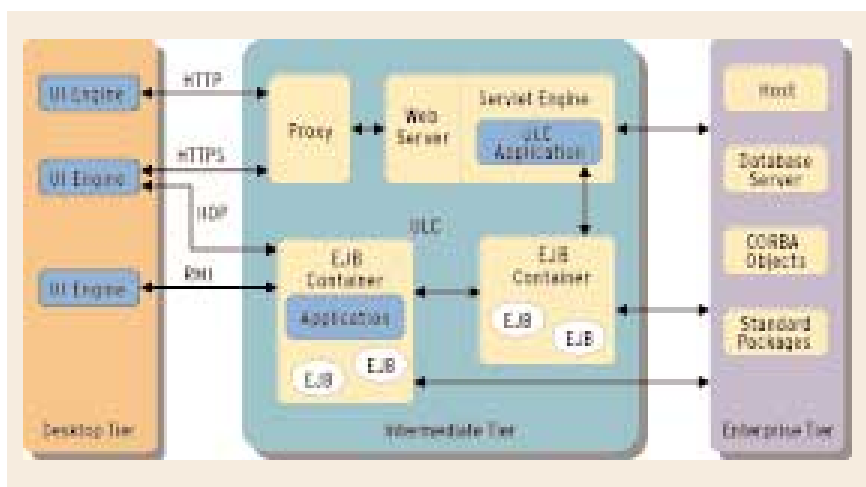
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The presentation and business logic are split; a 300KB UI engine displays the presentation tier on the client and handles communications with the server.

## Canoo: Deploy Swing Apps as EJBs, HTML

Company claims solution reduces fat from client, requires minimal changes to existing apps

BY EDWARD J. CORREIA

Developers can build Swing applications without the fat client. That's the claim of Canoo Engineering AG, which next week will release Ultra Light Client 5.1, the latest version of its deployment framework that it says permits developers to build or modify existing Swing applications and deploy them as applets or in EJB containers.

According to Bruno Schaeffer, CTO of Canoo (www.canoo.com), ULC permits developers to build apps as functional as those on the desktop while keeping the flexibility and ease of deployment of HTML. "If HTML is too limited for the user interface you would like to develop, but you would still like to have the same architecture as HTML [including] client independence and running or deploying your application on a server only, for the developer this is very easy."

The solution works by separating the presentation layer from the business logic. Presentation is displayed by the UI engine, which is a small Java app or applet that communicates with the server via HTTP. "You develop like Swing, and at runtime it looks like a fat client. But at deployment, you run the application as a servlet or an EJB. You don't have to think about partitioning your business objects between the client and the server; everything is on the server side," he said. Schaeffer claimed that existing Swing applications need to change very little to be compatible with ULC. "The API is very similar to Swing, so migration is usually quite easy," he said, adding that in version 5.1, tables and trees develop-

ment is now on par with Swing's.

Schaeffer asserted that the performance issues usually associated with Swing are not present with ULC. "For productivity-type applications, you may have performance problems with Swing. [But] the applications we have in mind are client/server, and the bottleneck there is usually not the interface but either in the network connection or with the server load." A J2SE JVM also is required on the client.



The apps we have in mind are client/server, says Canoo's Schaeffer.

As for the server, any J2EE-compliant server will do, claimed Schaeffer. "For servlets, we have tested it with TomCat, WebSphere, WebLogic and JRun. And in the EJB deployment scenarios, we've tested with JBoss, WebSphere and WebLogic. The client can run as a stand-alone application, an applet, or using Java WebStart," which is Sun's method for launching applets initially through a browser that run independently thereafter.

Schaeffer further claimed that much of the maintenance can be automated, unlike traditional client/server environments that require frequent client version maintenance. "If you're [deploying as] applets, this is taken care of because you provide a new version of the UI engine [each time the app launches]. And since it's less than 300KB, downloading it takes very little time compared to a real fat client. In the stand-alone version, the UI engine will tell you if it is outdated. And with Java WebStart, the problem is taken care of by [Sun's] infrastructure."

Development licenses cost \$1,000 per seat plus a volume-based runtime fee ranging from \$200 down to \$60 per concurrent connection. z

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CALDERA

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say we're not only a Unix company." SCO, which was shelved after the March acquisition when the remainder of that company changed its name to Tarantella Inc., is a brand that is highly recognized globally.

The name change and open re-embrace of Unix is the second major change among the four Linux vendors that formed UnitedLinux, a consortium assembled to drive the common advancement of Linux. As reported in SD Times' Sept. 1 issue, Turbolinux Inc. was obtained by Software Research

Associates Inc., a large Japanese software concern. Bawa also did not see these events as a threat to the common UnitedLinux goals. "We polled all the CEOs [of Conectiva S.A., SuSE Inc. and Turbolinux] and found the commitment is unwavering." Bawa, though, acknowl-

edged that most of the future heavy lifting on the company's own Linux distribution will be done by engineers contributed from each of the four companies. "We recognize our core competency is in multiple areas, and that the core competency on Linux is in the UnitedLinux initiative and not in a fragment-

ed industry. We'll have Unix products and Linux products." Caldera OpenLinux, the company's distribution of the open-source operating system, will be renamed SCO Linux powered by UnitedLinux. Version 4.0, the first built on the forthcoming UnitedLinux base, is to be released in November, according to the company.

SCO UnixWare, the new name for Caldera Open Unix 8.0, will be released by December as version 7.1.3, with new and updated development tools and network applications and improvements to hardware drivers, according to the company.

Also, the company (www.caldera.com) plans to release a new set of business products under the Extended Platform brand name.

Bawa and other company officials expect the rebranding and new product initiatives to reverse a trend of quarter-to-quarter earnings losses. While SCO Group reported a net loss of \$4.5 million for the quarter ended July 3, communications director Blake Stowell noted the loss has been shrinking and said the company expects to be cash-flow positive by the first quarter of 2003.z

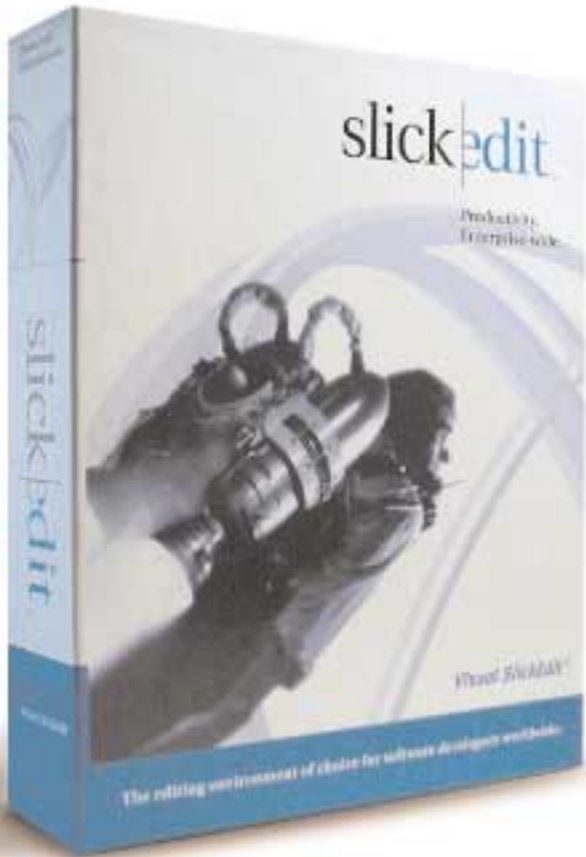
XML Mediator Gets SOAP, XSLT Engine

**BY CHRISTINA M. PURPI** Software AG has added a SOAP Gateway and an XSLT transformation engine to XML Mediator, which the company describes as a broker for XML information moving into and out of organizations.

Version 7.1.1.3 includes a SOAP Gateway that, according to the company (www.softwareag.com), eliminates the coding necessary to call a Web service and generate a response. The benefit, the company claims, is that all Web services can be managed in a single graphical user interface. This latest version also adds an XSLT generation tool licensed from TIBCO Software Inc. to provide a design solution for creating and debugging XSLT style-sheets. XML Mediator supports Solaris and Windows. z

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## .NET UPDATE

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gomery referred to the new release either as version 1.1 or using the code name "Everett"; it is unclear whether the software will officially be called Visual Studio .NET 1.1 or .NET Framework 1.1.

According to Flores, the biggest improvement is that Microsoft's .NET Compact Framework and Smart Device Extensions will be incorporated into VS.NET 1.1, allowing applications to be deployed into mobile devices. Flores positioned the support for mobile applications as Microsoft's highlighted feature of the new release.

"On the desktop, we give our developers a choice of building two kinds of applications: one that is a browser-based Web app, or you can create a traditional Windows application that lives on your desktop and does not require a browser," said Flores. "On the [mobile] device, we have the exact same model. If you have a Pocket PC that may have a modem in it, you can create a browser-based [server] application that you can hit with that Pocket PC. Equally, you can hit that same application using a wireless Palm Pilot or RIM Blackberry, or any WAP-enabled cell phone. That's the browser-based model. You can build those applications today using VS.NET and the Microsoft Mobile Internet Toolkit.

"What's new [with Everett] is full support for the .NET Compact Framework," Flores

continued. "It's designed to create a device-resident application that's able to retrieve large information or data that's resident on the device, manipulate the data and then sync back up to a larger entity at some point." What's more, he said, "the functionality that today is in MMIT gets absorbed directly into the .NET Framework."

Flores emphasized that Everett—both the tool and the runtime—are synchronized with Windows .NET Server. "By synchronized, I mean that the [version] 1.1 Framework in Everett is the same one we'll be shipping as the programmatic platform in Windows .NET Server."

New to the version 1.1 Framework, said Flores, are a number of incremental software improvements. "Largely, as Montgomery said earlier, there are a lot of bug fixes. Your applications will run much longer; they'll be more stable. There are security tweaks that we've made to default security mode. There are additional minor things, such as support for IPv6. If you take advantage of those minor new features, you're binding yourself to the 1.1 Framework."

In regard to the Common Language Runtime and Microsoft's language written for it, namely C# and Visual Basic .NET, Flores said, "other than bug fixes, they largely remain constant. There won't be any upgrade wizards. The languages themselves are unchanged.

"We've also improved our Web services support," Flores continued. "We now support the

# LogiXML Models Smaller Projects

## New non-UML tool tries to simplify app assembly

BY DAVID RUBINSTEIN

While formal modeling methods may be ideal for major software development projects, it's often seen as overkill for software being built by smaller teams.

A 2-year-old company called LogiXML Inc. hopes to simplify modeling and bring it down to smaller projects by introducing a set of application modeling tools.

Using the illustration that architectural and building needs are different for skyscrapers and townhouses, LogiXML founder Arman Eshraghi said the product is aimed at development teams that have no architect or software engineer.

The company had sold its solution under the LogiXML product name, but now is moving away from that name, according to Bill Kotraba, director of sales and marketing. Since spring, LogiXML ([www.logixml.com](http://www.logixml.com))

has released AppDev Enterprise, a modeling tool for building data-driven Web applications, and WebDev Enterprise, for creating Web sites. Late last month, the company announced ReportDev, a report generation engine that is to be released later this year.

In the development tools, modeling is done in a drag-and-drop way and generates underlying XML definitions and code, which then are interpreted in a runtime for implementation as either CSS, HTTP, XML or XSL, depending upon the tool being used, Eshraghi explained. An application wizard helps developers create the presentation layer either automatically or through custom selections.

"UML is a tool for architects," Eshraghi said. "After they're done with the model and

architecture, they create code and give it to a developer." With LogiXML, Eshraghi claimed, developers don't need to learn UML, scripting or HTML. The modeling component is based on LogiXML's own modeling language, which Eshraghi said eliminated much of the complexity and rigidity of UML. "Someone who just knows the data can create an application," he said. "When you define an application in XML files, you can run the app right away."

LogiXML currently is targeting Windows and .NET, said Eshraghi. The price of AppDev Enterprise is \$2,500 per developer and \$1,000 for a single runtime on a single processor; WebDev Enterprise costs \$995 per developer and \$495 for a single runtime; and ReportDev is \$495 for the modeling environment and \$295 for the runtime. z

latest SOAP standard, which is the 1.2 specification, which provides more and richer data types. Also, we formerly had something called the GXA Toolkit, which used to be called the Web Services SDK. This will now be incorporated into Everett."

Developers using C++ on Everett pick up new features, claimed Flores. "First of all, they gain access to the WinForms Designer, which is the visual designer for laying out user

interfaces. Up until Everett, only Visual Basic, C# and J# users had access to that designer, but now the C++ developer also has full access to the designer." In addition, he said, C++ now has much greater ANSI C++ compliance. "The C++ developer will have a far easier time taking code from platform to platform."

### COMPATIBILITY ISSUES

Flores made a point of assuring developers that the new tool and

runtime shouldn't create compatibility issues with either existing .NET applications, or on PCs and servers that have the .NET Framework installed. Code written using Visual Studio 1.0, he said, would run on the version 1.1 .NET Framework, unless the application relied upon a specific behavior that turned out to be bug-corrected in the new version of the runtime.

He also said that applications written with Visual Studio .NET Everett would run on the original .NET Framework—unless the developer chose to use any of the new features. In that case, the deployment platform would have to have the version 1.1 .NET Framework installed.

Flores did not know if a version 1.1 .NET Framework would be available simultaneously with the release of Windows .NET Server for Windows desktop clients and Windows 2000 Server.

A detailed road map document from Microsoft regarding its developer tools, which also describes a version of Visual Studio .NET designed for applications running on the next version of SQL Server, code-named "Yukon," and with the next version of the Windows desktop, code-named "Longhorn," can be found at <http://msdn.microsoft.com/vstudio/productinfo/roadmap.asp>. z

## VULTUS

&lt; continued from page 1

adding that WebFace returns developers to HTML and JavaScript to get things done reliably. "We're giving them the same technologies without the dumb-down aspect. This is simply an extension of what people are already doing today."

WebFace Studio, the suite's development tool, combines XML, JavaScript and HTML to build Web-based versions of enterprise application GUIs. Applications are deployed from the WebFace Browser Application Platform. "It is not an *n*-tier architecture, but rather, it's extending the presentation tier of an *n*-tier architecture," explained Grant.



IT is sick and tired of anything being installed, says Vultus' Grant.

"From a developer's perspective, it's exactly what they would anticipate. Events are being thrown that [the developer] traps via a programming language and adds his custom code to respond to that event. It has an intuitive API modeled after PowerBuilder, Delphi and Java Swing. Developers can build an application that is indistinguishable from any Windows or Mac application," he claimed.

A former consultant at Novell Inc., Grant said experience has taught him that solutions involving large client-side downloads are plagued with problems. "We tried that on large projects at Novell, and they were all considered failures because of performance, robustness and maintenance

issues. Our technology works completely with technologies that run natively within the Web browser. HTML and JavaScript have been running natively within the browser for a very long time, and XML more recently. Anytime you add on to your Web browser, whether it's Flash or the plug-in for Java applets, you are extending the browser, and there are inherent problems with that, such as crashes, upgrade problems OS-version [conflicts] and client/server-like maintenance problems."

The solution, according to Grant, has been compared with screen-scraping technologies such as Citrix's Metaframe. "We're more than that. Screen-scraping technologies do not enhance the applications they scrape. [We offer] event-driven development just like in Delphi, Visual Basic or Java Swing. You

can respond to events and put in custom code using JavaScript. This is a full-blown development environment."

Grant differentiates WebFace from competitive products: "It may be slower than C code, but it's way better than alternatives. Altio's approach uses Java, which requires a browser plug-in. And the Curl client is 9.8 [MB]. With WebFace, nothing is installed in the browser except a URL with the location of the application. The WebFace application is loaded without Java or any plug-ins."

WebFace Solution Suite costs \$15,000, including one WebFace Application Platform server license for up to two CPUs plus one developer license for WebFace Studio. Additional CPU licenses cost \$7,500; additional developer seats cost \$2,500. Clients require IE 5.0 or higher. z



# EMBARCADERO ADDS REAL-TIME INTO DT/STUDIO DATA ETL TOOL

## Plug-in module finds, reports on changes

BY CHRISTINA M. PURPI

Embarcadero Technologies Inc. has created a new real-time data integration module as an add-on for its DT/Studio data extraction, transformation and loading (ETL) tool.

The new Delta Agent add-on searches a database's transaction log, finds the changed data and presents a complete picture of all the changes. "If only 10 percent [of the data] changes, that's all I have to look at; it immediately identifies and processes [the changes,]" said Stephen Aikins, product manager for DT/Studio ([www.embarcadero.com](http://www.embarcadero.com)).

Because data structures can change rapidly, said Aikins, "you can create optimal structures and relationships in a visual, easy, drag-and-drop way, without knowing any SQL, which is a great benefit to any developer." He explained that developers now have access to real data and also have the ability to manipulate all data structures to suit their purposes without being dependent upon other people.

DT/Studio supports SQL Server,

Oracle9i, DB2, Sybase's iAnywhere, and JDBC connections, as well as flat file and XML source support, according to Aikins, who added that versions for OS/400 and OS/390 are in the works.

Other new usability features include an XML reader and a debugger. DT/Studio now accepts XML as a data source, while the graphical debugger interface allows a developer to create watches and breakpoints, and drill down to the results. Version 1.8 adds an enhanced reporting subsystem, which now includes XML output for reports that identify, for example, the last time the engine ran and its success and failure rates—in other words, said Aikins, "all the information you want when trying to track down a problem."

DT/Studio 1.8 is available now and costs \$35,000 for the ETL engine and an additional \$25,000 per data source for the new Delta Agent. Pricing is one feature that sets DT/Studio apart, according to Aikins. "Solutions from Ascential and Informatica run well into six figures, and that's just to get you started." z

# Keynotes to Highlight Gartner ITXpo

BY CHRISTINA M. PURPI

This year's Gartner Symposium ITXpo will subject major industry heavyweights to questioning by Gartner analysts that will drill down into topics ranging from industry trends to past controversial subjects and what the future holds. The six-day conference, scheduled for Oct. 6–11 at four of the Walt Disney World resorts, offers courses and private one-on-one meetings with Gartner analysts, along with keynote interviews by industry leaders such as Steve Ballmer, CEO of Microsoft Corp.; Michael Dell, chairman and CEO of Dell Computer Corp.; Carly Fiorina,

chairman and CEO of Hewlett-Packard Co.; and Scott McNealy, chairman and CEO of Sun Microsystems Inc.

New to this year's event is the addition of "Marketplaces," sections of the exhibit floor that group together vendors of similar technologies. The Marketplaces are organized according to three topics: CRM; enterprise systems management; and application integration and middleware. Also featured at the ITXpo are Peer Exchange Workshops that are designed to bring together professionals with Gartner analysts to discuss "practical solutions to common challenges." z



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### CONFERENCE HOURS:

**Sunday**, 1 p.m.–8 p.m. **Wednesday**, 8 a.m.–6 p.m.  
**Monday**, 9 a.m.–6 p.m. **Thursday**, 8 a.m.–7 p.m.  
**Tuesday**, 8 a.m.–5:55 p.m. **Friday**, 8 a.m.–Noon

### EXHIBIT HOURS:

**Tuesday**, 11 a.m.–6 p.m.  
**Wednesday**, 11 a.m.–6 p.m.  
**Thursday**, 10 a.m.–3 p.m.

### KEYNOTES:

**Monday**  
9 a.m.–9:15 a.m., Michael D. Fleisher, chairman and CEO, Gartner Inc.  
9:15 a.m.–10:15 a.m., "The Need for Speed—Building the

### Real-Time Enterprise"

10:15 a.m.–11 a.m., John Chambers, president and CEO, Cisco Systems Inc.

### Tuesday

8 a.m.–8:45 a.m., Carly Fiorina, chairman and CEO, Hewlett-Packard Co.

8:45 a.m.–9:30 a.m., Craig Barrett, CEO, Intel Corp.

9:30 a.m.–10:15 a.m., Scott McNealy, chairman and CEO, Sun Microsystems Inc.

### Wednesday

8 a.m.–8:45 a.m., Michael Dell, chairman and CEO, Dell Computer Corp.

8:45 a.m.–9:30 a.m., Steve Ballmer, CEO, Microsoft Corp.

### Thursday

8 a.m.–9 a.m., To be determined

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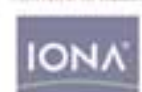
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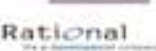
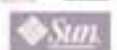
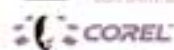
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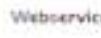
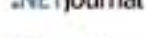
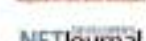
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# CodeWarrior Targets Embedded Linux

## Metrowerks ARM tools also now support XScale; new compiler to come next year

BY EDWARD J. CORREIA

If developers were unsure if Metrowerks Inc. would move beyond its token release last year of CodeWarrior tools for embedded Linux, the recent release of a new version should remove any doubt. The company last month unveiled CodeWarrior Development Studio, Embedded Linux Edition, a C-language IDE for Windows workstations that incorporates a gnu C compiler. Separately, the company also has added support for XScale targets to its CodeWarrior Development Tools for ARM Embedded Systems.

According to Bernardino Baratta, CTO of Motorola subsidiary Metrowerks (www

.metrowerks.com), the company's previous embedded Linux tools, which were Linux-hosted, took only a halfhearted stab at professional Linux developers. "When we first dipped our toe in the water last year, our requirement at the time was just to put some tools out there, find out what customers were really doing, and then go back and build the official tools. In the year between, customers said they were adopting Linux wholeheartedly, not just testing the waters, and that all their development stations were Windows-based," he said.

Baratta asserted that developers can do just about everything needed to target embedded Linux from Windows.

"You can build applications and a kernel on Windows, but you really can't build a distribution because of the [Linux] file system and some of the tools involved. The Linux kernel-level tools have to be Linux-hosted," he said, adding that a Linux-hosted version that will include kernel-level tools will be available in the near future, but would not commit to a date.

Despite being one of only a few C-language IDEs for embedded Linux, Baratta said that some of the included tools were not developed by Metrowerks. "The IDE and debugger are Metrowerks'. You can debug shared libraries and anything on top of the kernel.

Developers still get full browser support, dependency tracking, project window views, and never touch a makefile. [But] because of the realities of the Linux world, it's tough not to be a gcc-compatible compiler and exist in that world. We have a Metrowerks compiler targeting Linux that works five to 10 times faster than gcc, but for this market, most developers like the gnu [compiler]."

CodeWarrior Development Studio, Embedded Linux Edition for Windows hosts is available now for \$4,595 and supports Motorola PowerPC, MIPS and x86 targets, with ARM and ColdFire targets scheduled for October. The software supports all Linux distributions, according to Baratta.



Linux users like the gnu compiler, says Metrowerks' Baratta.

to enter the ARM tools market, in which approximately 20 companies vied for dominance. The company opted instead to license its CodeWarrior IDE to ARM Ltd. for use in its RealView development suite. "But as of the last couple of years, especially since we were acquired by Motorola, which got a license to ARM, more of our customers were asking us to bring an integrated CodeWarrior to ARM," which he claimed is superior to ARM's solution because of tighter coupling with the debugger.

Though the tools still include ARM's compiler, Metrowerks plans to integrate its own compiler sometime next year, Baratta said. "Now that we've entered [the ARM market], the focus is to provide the road map from processor on a board all the way up to high-level OS [programming]. Next year we'll include the CodeWarrior compiler, which will bring C++ support, tighter integration and faster turnaround."

Available now, CodeWarrior Development Tools for ARM Embedded Systems 1.2 for Windows hosts costs \$4,995. z

## METROWERKS TAPS INTO AMC

Metrowerks Inc. would pay about \$4 million to acquire a substantial portion of the embedded testing tools assets of Applied Microsystems Corp., including its NetROM, CodeTEST and TAP hardware and software, under the terms of a deal announced in early September. The acquisition, which would strengthen Metrowerks' presence in the embedded systems testing market, is subject to AMC shareholder approval.

Included in the acquisition were CodeTEST for LynxOS, Nucleus and embedded Linux, plus AMC's PowerTAP, CodeTAP and SuperTAP hardware debuggers. Metrowerks says it plans to enhance the tools to support additional hardware architectures, including parent company Motorola's new PowerQUICC III system-on-chip.

Metrowerks also will purchase AMC's game console manufacturing business and its DVD emula-

tion software, which is used for testing console apps. Metrowerks vice president of marketing John Smolucha said the plan also calls for the retention of 25 AMC employees, including engineers and sales and support people. AMC (www.amc.com) will focus on its enterprise data center business, Libra Networks (www.libra-networks.com). The deal should be completed within 60 days, Smolucha said.

-Edward J. Correia

# BirdStep Hatches Web Services Strategy

## Spreads XML wings with new versions of RDM Mobile database

BY EDWARD J. CORREIA

Taking its first step toward embracing Web services, embedded database developer BirdStep Technology Inc. has released RDM XML Mobile 2.0, a version of its database engine that permits developers to build application-specific databases using XML. The company also has released RDM Mobile 2.0, an update of its database for C++. Both are designed for Windows CE and Palm OS targets.

"[Web services] is a very important part of our strategy," said BirdStep CEO Hans-Arne L'orange. "We are seeing people moving in the direction of

XML in the way that information is distributed to the Internet. This is a part of a larger strategy for BirdStep," he said, adding that XML features will be added to the company's other databases over the next nine months.

Steve Wampler, product marketing manager at BirdStep (www.birdstep.com), said the move was a logical next step for the product. "XML is the dominant technology within the Web services sphere, and is what our target market has been looking for to mobilize



BirdStep will add XML to its other products within nine months, says L'orange.

their work force with handheld devices. We've added a robust set of APIs that includes DOM, XPATH and SAX [Simple API for XML]," which defines an interface between an XML parser and its client. Wampler said that BirdStep plans to enhance future versions with SOAP and UDDI, but gave no time line.

L'orange claimed a competitive edge over other synchronization solutions. "This is the first database specially designed for handheld devices and applications. Other embedded data-

bases we have seen have been shrunk or adjusted to the mobile arena. This is designed from the bottom for this arena," he said. L'orange listed markets where RDM Mobile is used: "sales-force automation, extracts of a CRM system, e-mail that includes sales presentation [attachments]," and anywhere that a snapshot of corporate data is required.

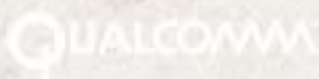
L'orange emphasized the importance of a synchronized solution for extending enterprise applications to wireless devices. "It's important that you have the necessary information if the connection is bad or broken. We feel there will

be a substantial increase in demand for databases based on [the fact] that business applications are running on mobile devices."

One of the main advantages of RDM Mobile over solutions such as Sybase's iAnywhere, according to Wampler, is its modularity. In its most basic form, he said, the RDM engine requires about 150KB of device memory. It grows to 175KB when transaction handling is added, which uses transaction logs to maintain database consistency. The footprint grows to 390KB when adding DOM, XPATH and SAX.

RDM Mobile 2.0 and RDM Mobile XML 2.0 are available separately for Linux and Windows hosts and cost \$1,500 per development seat plus a volume-based runtime cost of between \$20 and \$200. z





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# Navigating the Embedded Java Maze

With this language of options, the trick is finding the ones that best suit your application

BY EDWARD J. CORREIA

**D**evelopment managers making the choice to use Java in embedded systems are growing in number. According to Evans Data Corp.'s July 2002 Embedded Systems Development Survey, more than 36 percent of embedded developers currently use or plan to use a Java Virtual Machine in their next design, up from 26 percent for the period six months earlier. Of those, only 2.8 percent said they would not use Java in their next design, the study showed.

Though most respondents cited portability, connectivity and isolation from underlying hardware as the main benefits of the platform, Eric Giguere, author of "Java 2 Micro Edition: Professional Developer's Guide," believes that another part of Java's appeal as an embedded platform is consistency of the language and development tools across device types. "With C, you may get speed and access to the core machine's [hardware], but the downside is that you sometimes have to use specialized build tools and compilers. The appeal of Java is that you can use the same language and generally the same tools to develop for different devices. It also makes interfacing [embedded apps] with existing Java server [apps] easier and lets you share code between them."

But before writing the first line of code, a number of choices must be made, the first of which is selecting either Java 2 Standard Edition (J2SE) or its subset, the Java 2 Micro Edition (J2ME).

According to Alan Brenner, senior director of Sun ONE Consumer and Mobile Systems Group at Sun Microsystems Inc., resources of the target device are the main criteria for this selection. "The line between J2SE and J2ME is largely drawn on the resource level as opposed to the application level. Obviously,

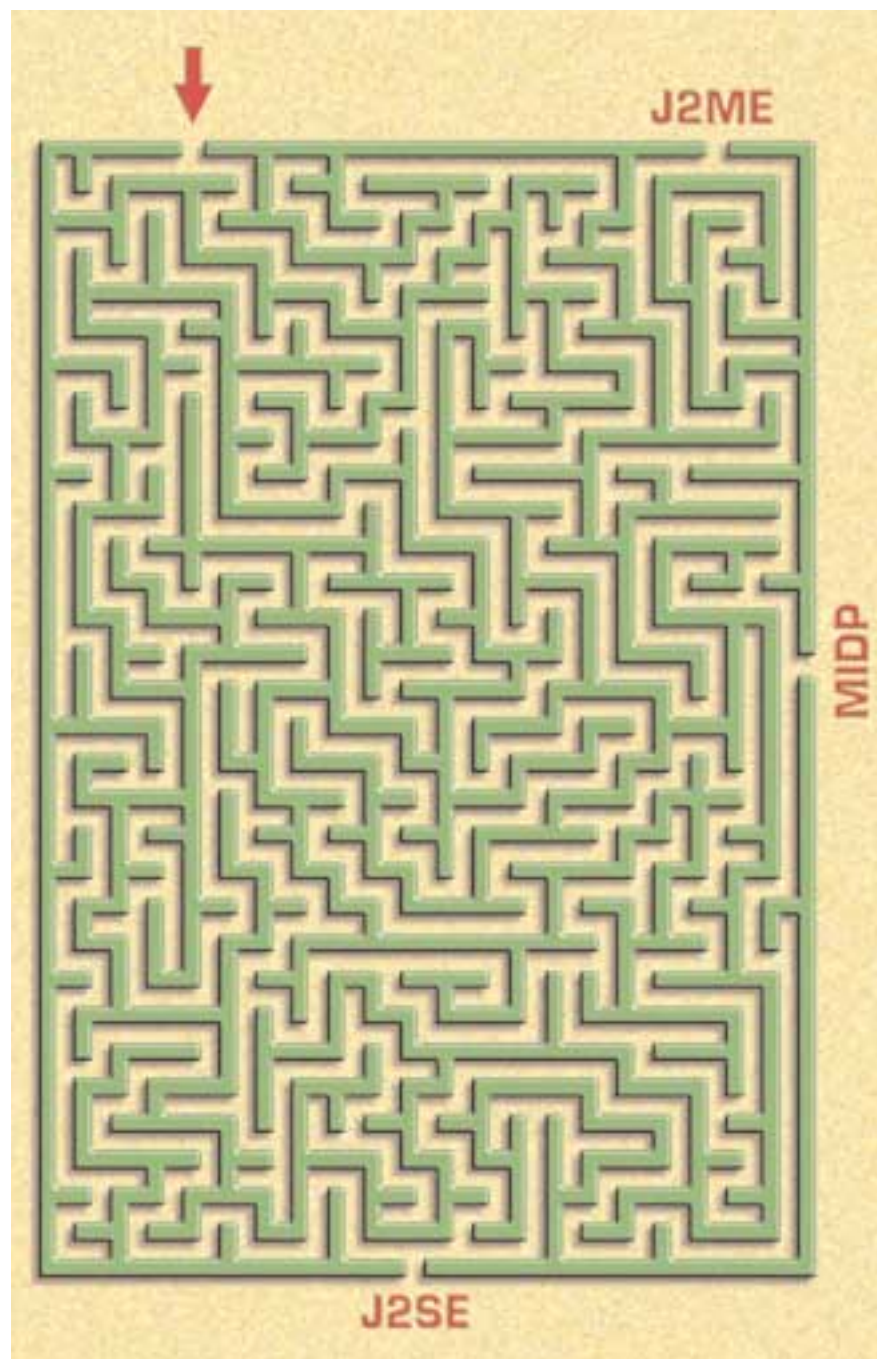
the application size matters, too. [But] developers should consider what their target client is." Minimum system requirements for Linux and Windows clients using J2SE include a 166MHz Pentium-compatible processor and 32MB of RAM for Java applications or 48MB for applets running within a browser using the Java plug-in. Resource requirements of J2ME are not so clear-cut.

J2ME introduces the concept of device configurations and profiles, which Brenner said "provide the right combination of technologies for specific device types and markets." A configuration defines the minimum set of class libraries available for a range of devices, he said, while a profile defines the set of APIs available for a particular family of devices. "For example, the profile for the cell phone vertical market is separate from the profile for the personal organizer vertical market, but both profiles work with the same configuration [CLDC]."

## CONFIGS AND PROFILES

The first configuration to be defined by Sun and the Java Community Process was the Connected Limited Device Configuration, or CLDC, which describes a device with limited resources that is connected much of the time. Sun offers two JVMs for CLDC, the smallest of which is the K Virtual Machine at 80KB. According to Sun, the KVM can run with as little as 128KB RAM (and up to 512KB) on 32-bit or 16-bit RISC/CISC processors starting at 25MHz. Sun's other CLDC JVM is the CLDC HotSpot, which includes an adaptive compiler that allows developers to precompile frequently used areas of code to optimize performance. It occupies roughly 150KB of device memory. Both require an additional 70KB for J2ME class libraries.

The JCP subsequently defined the



Mobile Information Device Profile, or MIDP, which spells out user interface, persistence storage, networking and other application issues for CLDC devices. MIDP and CLDC together permit the creation of a complete device runtime.

J2ME also includes the Connected Device Configuration (CDC), which defines a class of machines with 32-bit processors and at least 2MB of memory for storage of the VM and class libraries. The spec includes the C Virtual Machine or CVM, a full-featured virtual machine with a superset of KVM APIs. Also under CDC is the Personal Profile, which Brenner said will be the successor

to PersonalJava. In theory, apps written for this profile also can execute on the standard JVM, he added.

While Brenner admitted that the spec names can befuddle developers, he asserted there is a method to the madness. "The advantage for developers is that once you have determined the target client for your application, you get the best collection of APIs for that client via the profile. So, if you are targeting cell phones for an application, then the Mobile Information Device Profile, or MIDP, contains the APIs you will need. Since almost all mobile

> continued on page 30



# EMBEDDED JAVA

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Java handsets support MIDP, you use that profile.”

Jim Acquaviva, CEO of Kada Systems Inc. (www.kadasystems.com), extolled the virtues of Java for mobile phones, which he characterized as a fragment-

ed market in which most devices still run proprietary operating systems. Java, he said, provides a common execution environment. “By having a capable VM available to Java developers with well-specified profiles that have known deployment targets, by writing to that configuration and pro-

file, they can be sure that they’ll deliver a compliant application and target more environments without having the expertise in each of the operating systems.” Kada develops and markets the Kada Mobile Platform, which includes a J2ME Virtual Machine.

J2ME guide author Giguere

cautioned developers about falling into a false sense of security about the portability of Java. “There are a lot of misconceptions floating around about J2ME. [Developers] think that they can write a J2ME application and it will work on all devices. That’s not quite the truth. You have to

know the specific profile you’re using, and that determines what you can do and what you can’t.”

One way to help ensure compatibility with J2SE on handheld PCs is to actually use J2SE, instead of J2ME. SavaJe Technologies Inc. (www.savaje.com) develops and markets a J2SE-compatible operating system for ARM-based devices called SavaJe OS. According to Matthew Catino, SavaJe’s founder and vice president of business development, “We think [J2SE] is valuable when you see how powerful phones are getting today.” Catino asserted that the J2SE APIs are more akin to Microsoft’s Pocket PC than to J2ME using MIDP. “From an API standpoint, if you want to build a rich enterprise application, you’re probably going to pick Microsoft; MIDP was designed for a low-end phone.” Catino said that SavaJe OS supports Swing, AWT and Java 2D, and also can run MIDP apps.


For the enterprise, SavaJe presents one significant downside: lack of platforms. “We looked at the enterprise market, but no one in their right mind wants to buy a device that comes with an OS that they paid for, delete it and add a new OS,” Catino said, adding that with few exceptions, SavaJe sells exclusively to device manufacturers, OEMs and carriers.

### HARDWARE CHOICES

Helping to accelerate Java is an increasing number of implementations in hardware. “Factory floor devices, mobile, graphics and multimedia applications require very fast performance,” said Danh Le Ngoc, vice president of marketing and co-founder of Ajile Systems Inc. (www.ajile.com), which develops and markets processors and IP that execute Java code directly in hardware without the need for an RTOS.

According to Le Ngoc, Ajile solutions deliver performance five to 10 times faster than software interpreters for about half the price. “What you have to pay for [with software implementations] is a [processor], RTOS and JVM. These three components are needed to run Java applications, which are slow and unpredictable, even with the HotSpot compiler technology. The Ajile solution solves those system bottlenecks by direct

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# Defy Convention

## Bug Tracking?

### Be a Hero\*

Date: Thu, 7 Dec 2001 23:58:38 -0800 (PST)  
From: [redacted] <[redacted]@[redacted].com>  
To: [redacted]@[redacted].com  
Subject: EXCELLENT JOB!!!

OK, you have defied convention. Each of the last 5 or 6 bug tracking system changes I have been through (going way back to [redacted]), has been a bigger piece of [redacted] than the last.

I have put off using this “ExtraView” as long as possible, figuring it would follow the same pattern all the previous “upgrades” have. Tonight I finally had to look at a few things, and I just dove in.

ExtraView seems to be much nicer. And while there are some other things that I will want to do that I don’t know how to do yet, I was able to update several bugs quickly and without any training, guidance, or help. This is way cool!

Congratulations on doing a great job getting us a bug tracking system that is actually better!!!

\* First-time user congratulates his management for choosing ExtraView.

ExtraView bug and defect tracking solutions are Web-architected and scalable for complex workflows and product lines. A click-to-configure interface frees up your programmers and reflects your unique workflow in minutes, not weeks. Command-line scripting and integration with most source control and testing tools are available through a full HTTP and Perl API. ExtraView expands easily into help desk and customer support tracking. Using Unix, Linux, Windows, Mac OS? Not a problem with ExtraView. Call Sesame today and defy convention. Get ExtraView. Be a hero.



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## EMBEDDED JAVA

< continued from page 30

execution of Java bytecode in the hardware, eliminating software translation," he claimed, adding that the current runtime conforms to the J2ME specifications, and can run applications for MIDP profiles.

Le Ngoc said the Ajile solution does its job by executing multiple instances of a JVM. "One dedicated JVM in the hardware is responsible for hard real-time tasks, where the interrupt response time is less than 1 microsecond. A second hardware-based JVM is responsible for the dynamic environment, [which] downloads applets and [performs] garbage collection. But it does not interfere with the other JVM."

Kada's Acquaviva was critical of hardware solutions. "Silicon is pretty valuable real estate. Java is more viable as a software solution [because] the community process evolves it fairly rapidly, so it will need to be upgraded regularly. Software also provides greater flexibility in terms of configuring the functionality they need. Hardware solutions are fixed."

Le Ngoc said software updates are not a problem. "Only the Java bytecode engine and thread manager are embedded in silicon. These are the two components that are not going to be changed," he said, adding that all classes reside in external

memory, such as Flash, and can be updated as needed.

Taking a different approach to Java hardware implementation is Zucotto Wireless Inc. (www.zucotto.com), which offers a Java companion processor. Guillaume Comeau, Zucotto's chief integration architect, said Zucotto's solution differs greatly from Ajile's single-processor method, a method that requires all applications to be written in Java. "From the get-go, our offering was meant to integrate with existing devices, not to take the approach that everything was going to be ported onto a new processor."

Comeau said it's not enough simply to build a JVM into hardware. "In order to replace the software virtual machine, there has to be a channel to simulate communications that formerly went to the virtual machine and that now go to our Java stack. We provide a microlibrary that ties the existing system to the high-performance system," which he said is critical for easy integration.

Rob Gingell, chief engineer at Sun, said that although hardware JVMs can deliver increased performance, they may not always work as expected. "Simply trying to implement the VM in hardware is not often a good idea because the VM is optimized for different things than necessarily being the engine that hardware techniques are amenable to. [While] it is sometimes true

TALE OF TWO JAVAS					
	J2SE	J2ME			
Configuration	NA	CDC		CLDC	
Profile	NA	Personal	Foundation	MIDP	
JVM	Standard JVM	CVM	CVM	KVM	HotSpot
Minimum ROM (bytes)	NA	2.5MB	2MB	150KB	220KB
Minimum RAM (bytes)	32MB	1MB	1MB	128KB	512KB
Processor type(s)	32-bit CISC	32-bit CISC	32-bit CISC	16/32-bit RISC/CISC	32-bit RISC/CISC
Suggested minimum processor speed	166MHz	50MHz	50MHz	25MHz	25MHz
GUI options	Swing, AWT	AWT*	None	LCDUI	LCDUI
Target devices	Server appliances, factory-control devices, kiosks	Handheld PCs, set-top boxes	Pagers, handheld PCs, set-top boxes	Cell phones, pagers, low-end handheld PCs	Next-generation cell phones & pagers, handheld PCs

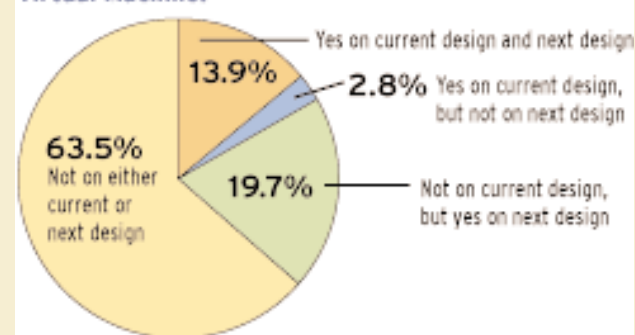
Source: <http://java.sun.com>

\*Does not include widgets

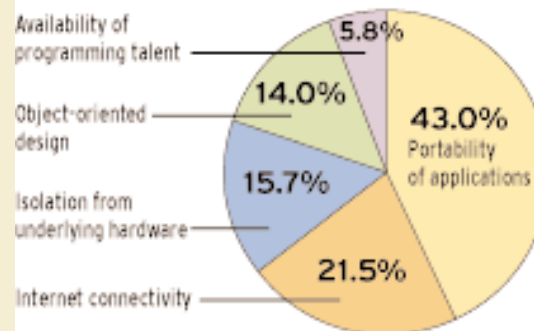
that some bytecodes do benefit from being implemented in hardware, some might come at great expense because the underlying operation proves to be not very primitive and is a semantically rich operation, like exception handling, for instance."

Gingell said that when developing embedded solutions, it's about boundaries and constraints. "At some level it's all computing; sometimes it's realized in silicon and sometimes in bits, and the distinctions about where you draw the boundaries are usually consequences of the context. One solution isn't more valid than another in terms of whether it works or not, but may be more valid in terms of cost or power considerations. That's what drives the movement of the boundary around. That's the difference between programming and engineering: Software engineering is programming with cost and other constraints in mind." z

### Does your current or next design use a Java Virtual Machine?



### Which of the following do you think is the biggest advantage of Java in embedded systems?



Source: Embedded Systems Development Survey 2002, Vol. 2 © Evans Data Corp.  
Margin of error +/- 0.9%

## A CASE FOR EMBEDDED JAVA

Rob Gingell, Sun Microsystems Inc.

Is Java suitable for all embedded applications? Rob Gingell, chief engineer at Sun Microsystems Inc., explained that while Java's VM architecture is great for portability, and its object-oriented approach helps with programming efficiencies, its resource requirements might not always make it the ideal choice for deeply embedded applications.

**SD Times: Can you make a case for using Java in single-purpose, fixed-function devices that are deployed and never touched again?**

**Rob Gingell:** While it may be true that the devices once created are not dynamic, it's usually also true that the engineering of the devices and production runs are pretty dynamic, and it's not unusual for people to change processors from one production run to another. The ability for Java to be portable is an engineering savings.

**Sure, but careful C developers many times can simply recompile when a new processor comes along. Can you justify the resource cost overhead of the JVM and its libraries?**

In a variety of fields, developers are finding that Java helps them be more productive by preventing certain errors. The biggest one is management of memory. The fact that Java removes that from your field of handling means testing cycles are reduced. That is far and away the biggest contributor because those are the errors that typically show up latest in the development cycle. Also, there are subtle type errors that can sometimes be introduced in languages like C; Java doesn't let you do that.

**Can you think of any application where Java is not suitable? And please don't say, "Where a really good language is not needed."**

[Laughs] Where's the sport in that? Java is not a replacement for an operating

system, and there's a floor of resources that Java expects—a bottom limit. So the limit is any circumstance that can't handle the resources for the necessary embedded base on top of which a Java implementation is usually built.

**Can you give us an example?**

In most auto architectures that exist or are planned, there's really only one 32-bit microprocessor in the vehicle, and that's in the telematics unit. All the other microprocessors are [8-bit] 6800s because of cost issues, and nobody bothers putting Java on 8-bit processors. In that case, Java's influence in current car architectures is limited.

**But aren't there Java proxy techniques that can be used to integrate Java with telematics?**

Yes. The assembly-language ROM code that's on the 8-bit microprocessor can present itself on the network as though it's native to the Java environment. So the transparency occurs from the center out, as opposed to the programming

you do on the telematics unit.

**Is Java applicable for real-time applications yet?**

That depends on how real your time is. The [JSR 7] specifications that have come out of the JCP are designed to enable deterministic real time down to microsecond or even submicrosecond events. Whether the implementation does that is dependent on your implementation. In the same way that Java helps you by managing the memory, if you're doing a real-time [task], you might find it unhelpful if Java dedicates all the resources to [manage memory] while you have three balls in the air. So a lot of what real-time Java is about is controlling the things that are otherwise making Java beneficial for you as a programmer and making sure they behave predictably in terms of time.

—Edward J. Correia





EDITORIALS

Linux in All Directions

Over the past several months, two out of the four members of the UnitedLinux consortium have seen drastic changes to their business model. The first, Turbolinux Inc., was sold to a large but not well-known Japanese software company, Software Research Associates Inc. The second, Caldera International Inc., has changed its name to SCO Group, and will be promoting its UnixWare version of Unix alongside its Linux distribution.

From that perspective, it looks like Linux is in disarray, with only Red Hat Inc. continuing to hold any significant influence on the market.

There are signs, however, of growing acceptance of the operating system by enterprise platform providers.

Consider that Sun Microsystems Inc. has brought out its own Red Hat-based Linux distribution and a low-end Linux server to complement its Cobalt hardware offerings.

And even Microsoft Corp., Public Enemy No. 1 to the open-source crowd, exhibited at San Francisco's Linux-World Expo for the first time, just a few months ago. Granted, the company was showing only a Unix-to-Windows migration kit, but still, that represents unprecedented attention from Redmond.

Not long ago, Linux vendors like Red Hat and VA Linux (now VA Software Corp.) were the darlings of Wall Street. The beginning of the end came in April 2000, when Linux-care Inc. canceled its anticipated initial stock offering, and the share prices of the Linux providers came crashing down.

Amid the reshufflings by the major Linux companies, grudging support from Sun, aggressive investments from IBM Corp. and Oracle Corp., and continued stability at Red Hat, the Linux community may be showing new signs of life. The operating system will continue to survive, perhaps thrive, offering a strong alternative to Windows and a focal point for anti-Microsoft activism.

As well as one helluva soap opera.

Déjà SCO

When Santa Cruz Operation Inc. sold off its Unix software and changed its name to Tarantella Inc., we thought that was the end of the line for the mighty SCO brand. Born in 1979, the company was a pioneering member of the Unix world, and indeed played a significant role in evangelizing the use of Unix on low-end systems, such as those running the Intel x86 processors. But in 2001, the company sold its UnixWare operating system and name to Caldera, preferring to focus on its managed secure access application, Tarantella. SCO was no more.

But now, suddenly, it's back. Caldera has adopted the SCO name to emphasize its Unix offerings. And customers who thought that Caldera was a Linux company will now be having second thoughts.

Will the new company be strong enough to compete as a commercial Unix vendor while also offering and supporting its own Linux distribution? Two operating systems are a lot for even one healthy software company to offer; with its stock down to around \$2 per share as of early September (compared with \$120 per share in early 2002), and market cap below \$30 million, the new SCO Group is anything but healthy. We'll admit to being skeptical about the company's prospects. z

GUEST VIEW

PROCEDURAL OR DECLARATIVE DEVELOPMENT?

Procedural programming and declarative development are two common approaches to building applications. What distinguishes these two styles of development? When is one approach better than the other, and why?

In general, declarative is the way to go—and let me explain why.

Take a look at the procedural approach to development. Using this approach, the application developer must not only consider what will be built, but also how it will be built. In other words, the procedural approach requires intimate involvement with the details of the application architecture and its underlying implementation. These details are programmed manually using a procedural language like C++ or Java.

In contrast, the declarative approach isolates the developer from the details of how the application works and frees the developer to concentrate on what the application does. The architecture and detailed steps that represent much of the "how" of the application are implemented for the developer by a prebuilt runtime engine or "container."

Instead of writing low-level procedural code, the declarative

developer provides a more abstract specification that is subsequently interpreted by the container. This high-level specification can take the form of an abstract nonprocedural language, a collection of declarative properties (application metadata) or a combination of the two. In reality, declarative development environments often involve some measure of procedural coding as well, but this is typically restricted to code snippets or methods that are executed by the container at well-defined points in the container-defined application life cycle.

The Container Managed Persistence (CMP) support in Enterprise JavaBeans (EJB) is a recent example of the declarative paradigm. EJB CMP allows the application developer to access persistent data sources from Java classes by declaratively specifying properties in XML deployment descriptors rather than by hand coding complex data access logic. The complex procedural logic for synchronizing the entity bean's state with the database is handled automatically by the container. EJB CMP defines a declarative

access language, EJB-QL, for expressing what data is to be manipulated by the application without worrying about the specifics of how the data is to be traversed and accessed.

A CLOSER LOOK

Now, let's evaluate the declarative and procedural approaches according to some basic development criteria such as productivity, portability, quality, performance and flexibility.

First, consider productivity. Being a higher level of abstraction, the declarative approach is more compact in its expression and, therefore, more productive than procedural programming. A single declarative property setting or expression can correspond to thousands of lines of handwritten procedural code. Nonetheless, sometimes the declarative approach can actually be less productive. For example, declarative environments can pose a steep learning curve for application developers as they struggle to learn the control flows "hidden" within the container. A declarative container can look like a mysterious black box to a developer who is used to seeing and con-



BILL DWIGHT

LETTERS TO THE EDITOR

SPREADING SALT

Thank you for your attention to the SALT (Speech Application Language Tags) specification and the important role of standards in speech-enabled applications ["Two Voices Clamor for Internet's Attention," Aug. 15, page 1, or at [www.sdtimes.com/news/060/story2.htm](http://www.sdtimes.com/news/060/story2.htm)]. While we're encouraged that your readers are learning more about the SALT specification, we have some concerns about your recent article, which included several inaccuracies about SALT that warrant clarification.

First, the story said the SALT specification is immature and unproven. While it is true that the SALT specification was only recently published in final form, it has the backing of more than 50 companies, some of which already have announced plans to offer products supporting SALT in the near future. The SALT specification is com-

plete and suitable for use in deployed applications today. In addition, SALT builds upon established standards, such as the W3C's SRGS and SSML, wherever practical.

Second, it said that the SALT specification does not allow developers to write an application once and deploy it in various environments. In fact, the design goals for SALT explicitly address the need to run a single application on multiple devices of varying sophistication using voice-only, visual-only or full multimodal interaction. SALT adds only speech input, speech output and call control capabilities to a variety of other markup languages such as XHTML or SMIL, providing even greater deployment flexibility and avoiding the restrictions of a fixed form interpretation algorithm.

Third, it said that unlike VoiceXML, developers need to write a fair amount of Java-

Script to build SALT applications. It is true that simple demonstrations can be written directly in VoiceXML. However, commercial applications generally are developed using tools that generate VoiceXML dynamically, often through extensive scripts that run on an application server. This programming model was embraced by SALT from the start, allowing a better fit with existing development tools, compatibility with Web markup languages and wider adoption among Web developers.

**Rob Kassel**  
Marketing Working Group  
Member  
SALT Forum

*Editor's note: SALT Forum is the vendor consortium behind the SALT specification.*

ECLIPSE 2.0 THE WAY TO GO

In response to your article "Stability the Goal of Eclipse 2.0," [Aug. 15, page 8, or at [www.sdtimes.com/news/060/story2.htm](http://www.sdtimes.com/news/060/story2.htm)]

trolling the explicit linear steps of a procedural program. Also, since standards tend to grow bottom up—starting with procedural languages and moving upward through layered APIs—declarative environments are often proprietary. The absence of standards increases the learning curve and reduces the availability of companion development tools that can boost productivity. Finally, a declarative environment can be unproductive when its conceptual model is poorly matched to the task at hand. This mismatch can result in convoluted solutions to otherwise simple problems.

Next, let's consider portability. Since declarative containers intentionally hide implementation details from the developer, they are more portable than procedural implementations that are tightly wed to the underlying platform. The more abstract the declarative model, the more portable the resulting application can be—even to the point of seamlessly bridging major shifts in computing platforms like character mode to client/server to the Internet. Declarative application metadata and abstract languages are simply easier to migrate and upgrade than unconstrained procedural programs. One caveat is that declarative environments typically involve some handwritten code sup-

plied by the developer and called by the container at well-defined points. This is where the application developer can unwittingly subvert container portability by injecting platform-specific dependencies.

What about quality? Quality should dramatically improve with the declarative approach. Declarative developers write less code in a more constrained way, thereby reducing bugs and inconsistencies in the resulting application. The declarative container itself is typically rigorously tested code that embodies the best practices and associated patterns of seasoned programmers. That said, the aforementioned "hidden" control flows in the container make it more difficult for the application developer to know when application-specific code will be executed and in what context. This can lead to subtle bugs in application logic that are difficult to triage.

Performance involves similar trade-offs. On the up side, the code that implements the declarative container is typically highly optimized by very senior developers with significant systems programming expertise. Container providers can continue to make ongoing performance and scalability improvements without impacting existing application definitions. On the downside, declarative containers typically

address a very general problem space and cannot compete with hand-tuned procedural code targeted for a narrower problem domain. Also, declarative containers often interpret significant amounts of application metadata at runtime, further impacting performance—particularly at application start-up.

Many of the advantages of the declarative approach come at the direct expense of flexibility. The more abstract the declarative model, the less control the application developer has. The declarative container exposes the lowest common denominator attributes and behavior of the platforms being abstracted. The more impenetrable the declarative black box, the harder it is for developers to tune performance, work around container bugs, customize built-in behavior, leverage platform specific functionality and so on.

#### SOME RECOMMENDATIONS

So given all of these pros and cons, I recommend declarative programming, using a declarative container that is at a medium level of abstraction—one that is explicitly tied to either J2EE or .NET.

To boost flexibility, I'd choose a "white box" container that allowed subclassing and over-riding of built-in container behavior. I'd also choose an environment that used the same application development lan-

guage as the one used to implement the container. This eases debugging and performance tuning, increases flexibility and helps ensure availability of a broad array of development tools. I'd choose a container that implements relevant declarative industry standards and acknowledged design patterns. This would reduce the "mystery factor" and learning curve around what is going on within the container as well as improve quality and maintainability.

Finally—and perhaps surprisingly—I'd consider implementing key portions of the application using a procedural approach. For example, if the application required a user interface that was very native to a particular client device, I'd consider the procedural approach for the client tier and bind that to a declarative container on the middle tier.

However, I'd opt for spending the majority of my application development cycles concentrating on satisfying application specific requirements rather than reinventing the wheel on low-level plumbing that can be handled by a good declarative container. I'd only dip down to procedural programming when the application requirements demanded it. z

*Bill Dwight is vice president of Application Development Tools and iLearning at Oracle Corp.*

.sdtimes.com/news/060/story9.htm], Eclipse 1.0 was, in my eyes, a 0.5 release for a normal user [doing Java coding].

I couldn't use it because of so many features that weren't there that I was used to in [IBM's] VisualAge for Java 4.0.

Only when the first betas of 2.0 came out, did it become better and better, and much more usable. In my eyes, Eclipse 2.0 is what Eclipse 1.0 was supposed to be.

Eclipse 1.0 is not really a finished product; it was a release to have something there to get tools providers a first "stable" platform. But for developers, Eclipse 2.0 is the way to go.

**Johan Compagner**  
J-COM Staphorst

#### STYLE OVER SUBSTANCE

Steven Vaughan-Nichols can bet all he wants ["Back in Windows Again," Aug. 1, page 35, or at www.sdtimes.com/cols/javawatch\_059.htm]. When it comes down to liquor salesmen and propeller

heads, I always put my money on the liquor salesmen. Why? Because when you get right down to it, no one wants to talk to a propeller head, but mention alcohol and...

**Todd Paholsky**  
VIA Information Tools Inc.

#### NOT FINDING MODELERS

Thanks for the actual data in "Modeling Usage Low; Developers Confused About UML 2.0, MDA" [July 15, page 1, or at www.sdtimes.com/news/058/story3.htm]. We're experiencing a high managerial level push toward using UML, but aren't finding many people who are actually using it in practice.

It's helpful to have a citation to back up our anecdotal evidence.

**Laura Killian**  
State of Washington  
Dept. of Transportation

#### ANALYZE SYSTEM DESIGNS

Sorry, but I thought the article "Understanding Design Briefs"

[May 1, page 32, or at www.sdtimes.com/opinions/guestview\_053.htm] was typically "techie."

Getting users to specify a system is best done using the kind of analysis approach that the business community applies to itself. Tools like UML are of no interest whatsoever to the average business user.

I once built a system for the U.K. Ministry of Defence using the preferred government analysis technique. We thought our documentation was wonderful. The users simply binned it as being not relevant to them. When will systems designers learn?

**Allen Woods**  
JIT Software Ltd.

#### MOVING FROM JAVA TO C#

Your article "On Divergent Paths" [April 15, 2001, page 29, or at www.sdtimes.com/news/028/special1.htm] was great. I have been programming with Java for some time now. I would and I am moving to C# .NET.

C# and the .NET Framework have everything that a programmer will need, i.e., simplicity, power, and most of all, I can still leverage my existing C++ skills within the framework.

I clearly don't see a need for Java anymore. My reasons are as follows: .NET truly gives the developer and the industry the flexibility that it needs. The JVM provided that flexibility by providing platform independence with the limitation of only being able to use the Java language. The CLR gives you the best of both worlds: platform independence and language independence. What else could you ask for?

**Mccorney Severin**  
DemandTec Inc.

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## LINUX IN THE MIDDLE

The LinuxWorld Expo trade show last month showed off Linux's penetration into areas where it had long been expected but only recently arrived—enterprise back ends and, surprisingly, desktops. The sight of Oracle and Sun joining previous exponents IBM and HP in endorsing Linux was convincing indeed. It was and is clear that the operating system is greatly expanding the enterprise toehold it established running Web servers.

Most impressive of all was the number of firms selling Linux clusters, and large clusters at that. The release of Linux kernel 2.4 in January 2001 opened the doors to robust clustering, and this LinuxWorld showed how far things had progressed in this regard. Huge multiprocessing systems from Dell, IBM and even Penguin Computing were visible on the floor.

Equally visible were 64-bit versions of Linux running on the Itanium 2 processor from Intel as well as prerelease versions of AMD's Opteron family of processors. The latter use what is dubbed the x86-64 architecture, which is effectively the same as 32-bit Intel architecture, but uses 64-bit addresses and some new 64-bit data types. (This is different from Intel's Itanium architecture, which runs 32-bit Intel binaries as 32-bit applications. To obtain access to 64-bit addresses and data types, the program must be

recompiled for the Itanium 2 processor and use its EPIC architecture.)

With the support of big server hardware manufacturers, enterprise databases and high-end vendors, Linux indeed appears on the verge of breaking into the glass house in a big way.

The client side of things also looks somewhat optimistic. Linux on the desktop no longer seems like a quixotic dream. A confluence of several factors has made this possible.

First is the availability of productivity apps similar to Microsoft Office. StarOffice and OpenOffice from Sun cover most of the functionality of Microsoft Office and do an excellent job. Incompatibilities in file formats—the killer argument against—crop up only in the use of extended features. For the vast majority of documents you're likely ever to produce, these Linux tools are plenty compatible enough.

However, for those high-end office-software needs, there is an excellent solution from CodeWeavers called CrossOver Office. This is an implementation of the Wine project, which consists of the libraries and DLLs that enable Windows binaries to run unchanged on Linux. You install CodeWeavers' software, then Microsoft Office, and sud-

denly you're running the Redmond software natively on Linux. CodeWeavers handles all the details, including printing, plug-ins to Netscape/Mozilla and so on. This option means that you have true 100 percent file compatibility and your previous investment in Microsoft Office licenses is not wasted. Very cool.

The final contributor to the nascent success of desktop Linux is the new Microsoft volume licensing scheme that just went into effect, in which companies must "subscribe" to their desktop applications or pay annual maintenance fees regardless of whether they upgrade.

This plan ([www.microsoft.com/licensing](http://www.microsoft.com/licensing)) has left many enterprises dissatisfied and is forcing some to reconsider just how much they need the latest feature-rich Microsoft products.

Several analyst firms predict Linux and OpenOffice will be the prime beneficiaries of this dissatisfaction with Microsoft's aggressive policy. Market-analyst Giga projects that OpenOffice could own 10 percent of the office applications market within three years. This number seems excessive to me, but even if Giga is half right, Linux will have taken a huge step toward establishing itself in the enterprise desktop mainstream.

The one dip in the Linux enterprise story is middleware. If you remove IBM WebSphere, Java applications server

sales on Linux are fairly rare. Likewise, if you remove IBM's WebSphere MQ (formerly MQSeries) from messaging middleware, there's not much for Linux. If desktops and servers are growing so much, why isn't the middleware market?

Certainly, the problem is not standards or interoperability within the operating system. Linux Standards Base (LSB) certification from the Free Standards Group is helping prevent splintering. So is the UnitedLinux initiative. In addition, companies like Aduva are helping OEMs and vendors by certifying their applications. So, what is the problem?

It is that IT managers are still not completely comfortable with Linux. Their unspoken hesitation comes not from Linux's capabilities, stability or scalability (which have been decisively proven), but from the open-source business model. Buyers want to know who is the accountable company on the other end of the phone that will stand behind the operating system. Who will solve their problems? Who will make sure mission-critical apps get mission-critical support? Red Hat has not yet established the credentials to do this. At present, only IBM can answer the call. And until other companies join the fray, IBM more than any other factor will determine Linux's fate in the back room and in middleware. z

*Andrew Binstock is the principal analyst at Pacific Data Works LLC.*

### MIDDLEWARE WATCH



ANDREW BINSTOCK

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## JDBC FOR YOU AND FOR ME

Once upon a time, when keeping my xBase dialects straight and mastering VAX/VMS Datatrieve was my life, I developed certain prejudices. They're still with me today. So, when I look at today's Java Database Connectivity (JDBC) drivers, I know exactly what I'm looking for: database drivers that make a developer's life easier...and the application as fast as possible.

So, for starters, I want JDBC drivers to be JDBC 3.0 compliant. Yeah, I know, I know, it's fairly new—it was only approved last May—but I like the new features...a lot. (See <http://java.sun.com/jdbc>.)

As a programmer, I particularly like the fact that it's now mindlessly simple to get the value of a freshly created, automatically generated key, and also that you can end up with multiple results if you have more than one ResultSet. I don't know about you, but that basic functionality just made my life a lot easier.

From a software maintainer's viewpoint, what I like most is that with JDBC 3.0, I can still use most of my JDBC 2.0 and 1.0-compliant code. Yes, I know all the arguments against backward compatibility and, yes, there comes a point when you simply must rewrite your code. So what? With version 3.0, I can

still run the old code, use the newer features and leave worrying about updating my code for a rainy day.

Of course, if you're working with any kind of significant DBMS application, you probably will want to revise a lot of code to get one new feature in: transaction save points. By letting you divvy up transactions into logical breakpoints, you can give users more—a lot more—control over transaction rollbacks. With this, you can set it up so that the good part of a transaction gone wrong can be preserved. I don't know about your users, but mine always welcomed anything that could keep them from rolling back one bit more than they absolutely had to.

JDBC 3.0 isn't perfect, though. Sun's JDBC-ODBC Bridge still doesn't support concurrent access from different threads. In other words, you can write your fancy multithreaded Java to use the Bridge, but then it will be stuck in a single thread traffic jam. Adding insult to injury, you can still get deadlocks between the Bridge's semaphores and ODBC DBMS locks. I hate having to use both JDBC and ODBC in an application in the first place—having an application slow down or even lock up on me really gets me ticked off. Memo

to Sun and the Java community: Fix It.

Of course, given my druthers, I won't be using ODBC at all. As you probably know, there are several classes of JDBC drivers. First, there's the Bridge, and you already know what I think of it. Then, there are the ones that use a native API to convert calls for the DBMS. That's fine and fast, but it requires that every client have the right binaries. I'm unimpressed.

Next, there's the middleware approach of taking JDBC API calls and converting them into, say, XML to speak to an XML-friendly DBMS. That's great for Internet-enabling an application, but I'm not crazy about it because now your programmer needs to know XML or what have you in addition to Java and the DBMS. Sure, XML is easy, but it's still another layer of complications.

Don't get me wrong. I like XML-based Web services. I think that once a lot more real standardization work is done, they'll become the middleware of the Internet. But, whatever else Web services may turn out to be, they're probably not going to be fast.

So it is that my preferred JDBC driver is Java from one end to the other. What I like about such drivers is that they're easy to use, don't require anything special on the clients and should help produce good transactional speed. Now, if only there were more ODBC 3.0

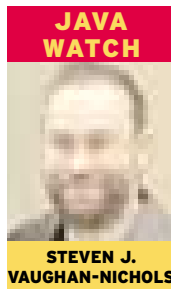
drivers of this kind around!

This is the kind of driver you expect a database vendor to supply, but I've been finding pure Java JDBC 3.0 drivers hard to find. Take IBM's DB2, my favorite database. If IBM has a JDBC 3.0-compliant driver for AIX or Linux, I can't find it. IBM's not the only culprit. If any of the major enterprise database vendors have fully native JDBC 3.0 drivers, I haven't seen them. (I'm sure you'll see letters to the editor about their showing up in future issues.)

Want to bet that all the database vendors' driver experts are working on Web services projects instead of building JDBC drivers? It wouldn't surprise me. In the meantime, I can only be thankful that DataDirect Technologies ([www.datadirect-technologies.com](http://www.datadirect-technologies.com)) agrees with me that native JDBC 3.0 drivers are a good idea, and offers them already for DB2, not to mention Oracle, SQL Server, Sybase and others.

Now if DataDirect, or some other company, could provide them for some of the less popular databases, like an old favorite of mine, ADABAS, I'd be pleased as punch. After all, the bottom line is that database work is every modern application's bottom line. z

*Steven J. Vaughan-Nichols is editor of Practical Technology ([www.practical-tech.com](http://www.practical-tech.com)) and has worked as a programmer for NASA and the Dept. of Defense.*



STEVEN J. VAUGHAN-NICHOLS

## PASSPORT TO THE MICROSOFT WAY

My father used to tell me stories about life in the army. These were usually followed by a stern "You know, a couple of years in the service would sure do you a lot of good!" That last, of course, happened only when my mother was out of earshot. But there was another army mantra he described that I've never forgotten: "The right way, the wrong way and the Army Way." I think a whole bunch of somebodies in Redmond have adapted that slogan and are now living the Microsoft Way, which is similarly neither right nor wrong.

That saying is generally employed in a situation where the common-sense move seems obvious, yet the party in question inexplicably insists on doing it another way. My current Microsoft example, unfortunately, is going to drag us all back to the question of security.

Redmond needs to face facts: It got caught. A prediction I made here quite a while ago (and one I was not alone in making) has come true: The U.S. government not only has decided that Passport is inadequately secured, but also is punishing Microsoft for misrepresenting that security to consumers. As punishment, the FTC has ordered two decades of government surveillance over the Passport ID system—a concept that in and of itself gives me the willies.

The FTC stated that Microsoft told

consumers that using Passport systems meant more secure sign-on and authentication technology, when in fact the technology is the same regardless of whether Passport is used. Microsoft also got dinged heavily for claiming that Passport wasn't collecting any personal data on its users when not only does it do so, it's specifically designed to do so.

Busted, but only partially. My real fear was that Passport would become as popular as Redmond intends, screw up and cause some kind of massive financial fiasco not only for consumers but also for partner businesses. Something like that would surely be followed by a nightmare lawsuit, so 20 years of government intrusion really doesn't seem like such a chore, comparatively.

So what's the wrong thing to do here? Ignore the problem and hope that it just goes away. Fortunately, Microsoft isn't doing that. What's the right thing? Band together with all the other security-beleaguered PC and software vendors to finally find some kind of common bulwark against malicious technology. Microsoft isn't doing that either. No, it's going the Microsoft Way, and this time it's code-named Palladium.

Now there's been a lot of stuff

recently printed in various publications about Palladium—most of it surprisingly concrete in its tone. That's surprising because if you ask Microsoft—and I have—it won't talk about Palladium openly, or provide details about how it's expected to work, except under a nondisclosure agreement. Those NDAs will stretch out for some time, so what follows will have to be based on worst-case conjecture rather than hard fact. The good news is that it means Redmond still has time to change its mind.

For those of us gazing from the outside in, Palladium looks like a Microsoft-branded and slightly modified version of the Trusted Computing Platform Alliance's specification. TCPA ([www.trustedcomputing.org](http://www.trustedcomputing.org)) has been around for some time, comprises more than 200 corporate members and already has released version 1.1 of its specification.

Because any successful trusted computing initiative necessitates cooperation between hardware and software, the logical move here (read: the right way) would be for Microsoft to throw its weight behind TCPA, thus giving all its users the best chance at a truly secure PC platform. Alas, Palladium doesn't look like it's going to play with TCPA, with Microsoft going so far as to already describe its own hardware requirements for Palladium implementations. This

includes, by the way, a new tamper-resistant secure processor.

Microsoft also has acknowledged that Palladium, which it describes as a set of features specifically for Windows, won't be built to completely thwart hardware attacks, but rather to make them more difficult and prevent one compromised machine from infecting another. Things will get further muddled because Redmond has tied Palladium to software keys, forcing users to key themselves to individual software licenses, and potentially allowing software manufacturers to partition segments of users' hard drives such that even the user can't access them anymore. (Microsoft's overview of Palladium is at [www.microsoft.com/presspass/features/2002/jul02/0724palladiumwp.asp](http://www.microsoft.com/presspass/features/2002/jul02/0724palladiumwp.asp).)

Bottom line: Palladium is far less about consumer security than it is about digital rights management, new enforceable Microsoft technology patents and, of course, profit and lock-in. Hopefully, when Redmond finally does open up about Palladium, this picture will have changed, but until then, Redmond definitely appears still to be walking the Microsoft Way, which I continue to predict will spell big trouble for everyone save a few lucky lawyers somewhere down the road. z

*Oliver Rist is a technology journalist and vice president of technology at AIC Inc.*



OLIVER RIST



# ONE MARKET, TWO DRIVERS

In the enterprise component reuse market, two different beliefs are driving the strategies of two of the largest vendors.

One side is operating from the belief that development shops "get it" when it comes to reuse; they understand the benefits to their organization, understand that off-the-shelf components have matured in terms of quality and testing, and are ready to adopt a reuse strategy. The other side remains steadfast in its belief that it still is necessary to convince major organizations that reuse can save them money, and is positioning itself on the leading edge of component evangelism.

The "get it" side is perhaps best represented by Flashline.com, which will soon announce an upgrade to its Component Manager Enterprise Edition solution. CEO Charles Stack has said his target customer is one who already is doing some sort of object development in either Enterprise JavaBeans or COM and COM+, and wants to institutionalize reuse in a more coherent way.

On the side of evangelism is one of the largest component sellers, ComponentSource, which last month announced that it will make metrics available for organizations trying to get hard numbers to support a buy-versus-build decision.

So, should component vendors follow ComponentSource's lead and evangelize, or assume, as Flashline does, that developers "get it"? Both. As Dave Quigley, the recently named executive director of the nonprofit Component Vendor Consortium, put it: "We endorse both approaches."

From where Quigley sits, anything

that can advance the notion of using components to develop applications is a good thing. Quigley believes there is a lot of opportunity for component vendors to take advantage of the evolving Web services, .NET and Java technologies. The whole notion of Web services, in fact, is based on a componentized, plug-in paradigm. For organizations that accept Web services, it is not a large leap to convince them that creating in-house apps with components can be equally advantageous in terms of turnaround time for updating applications and the cost savings associated with that.

For businesses developing .NET or Java applications, with all the complexity that goes with those platforms, reusing components to create interfaces and provide low-level functionality can free up developers to work on higher-level business logic.

ComponentSource is taking the argument a step further with the release of metrics to back up the argument. By counting the lines of source code in pretested, ready-to-run components, ComponentSource can help quantify the cost avoidance of having to write the functionality in-house. In a report it recently made available, ComponentSource cited a report-writing component that consists of 690,000 lines of source code and sells for \$499. For an organization to develop even only 10 percent of the equivalent functionality, ComponentSource claims, it would take 242 man-months to develop and test, costing \$2.4 million. That's a powerful argument.

"There is already so much proof that it's successful," Quigley said. "The case studies are there. There's a lot of selection of components out there. What's

occurred is that the little vendors who didn't do testing, whose components weren't up to par, are no longer around."

Where the two have differed—although now it seems as if ComponentSource is moving more toward Flashline's approach—is in their entry point into an organization.

Flashline's point of attack has always been at high-level decision makers, who can mandate the top-down reuse strategy that Flashline's solution can facilitate. ComponentSource, with the more traditional vendors, always has targeted the individual developer as the person who will bring component use into an organization. Now, with its SAVE-IT approach, ComponentSource wants to get out the message that component reuse is a business challenge as much as it is an IT challenge, so it seems poised to move up the organizational chart in its sales pitch.

No matter to Quigley, who represents the entire spectrum of component vendors. "There are thousands upon thousands of engineers who, on their own, evaluate a component within the applications they're responsible for, and put ROI reports together for their development managers. But there certainly are large organizations with a centralized approach to managing assets who will authorize the use of components within their corporate-wide standards. There are a few hundred of those."

In Quigley's view, one thing is clear: "Gone are the days when a developer says 'I have to build it all myself.' There's too much complexity and too great a window of opportunity" to avoid giving a component-based approach a try.

And that's good news for the market as a whole, no matter the approach. z

David Rubinstein is executive editor of SD Times.

## INDUSTRY WATCH



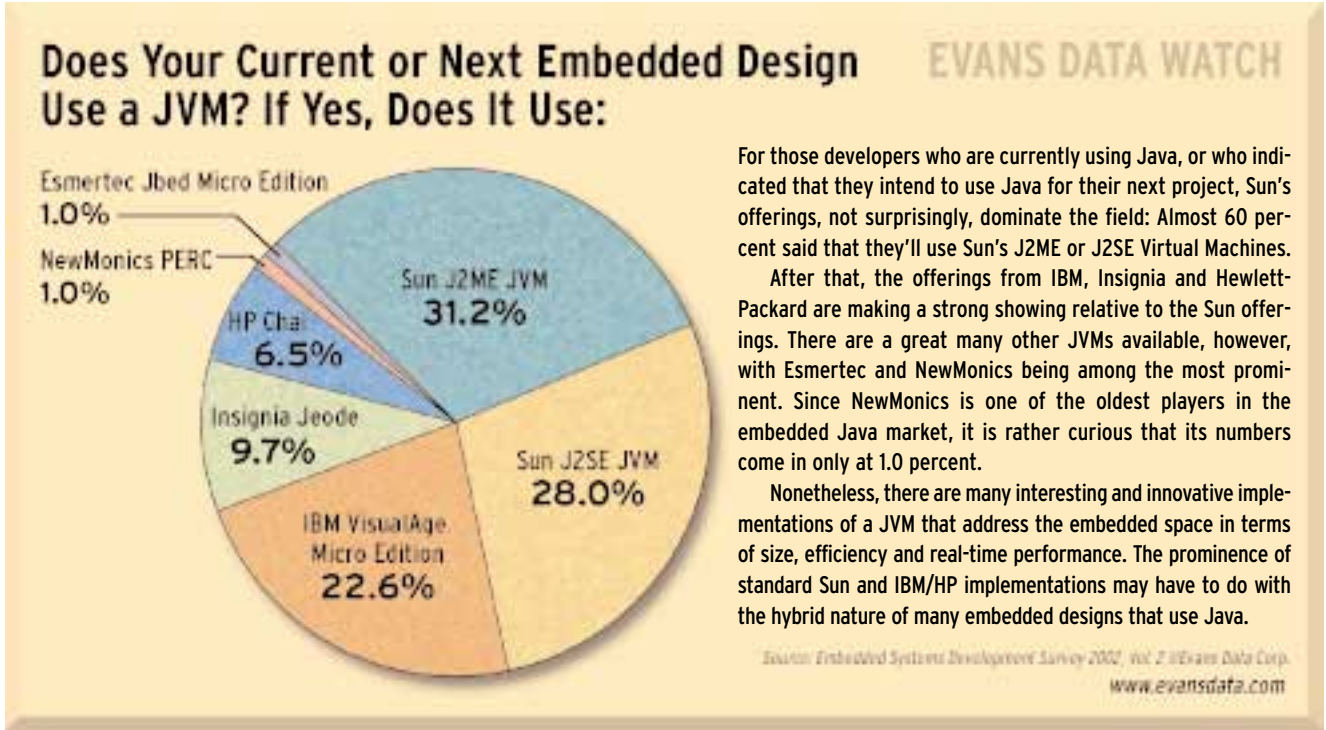
DAVID RUBINSTEIN

## BUSINESS BRIEFS

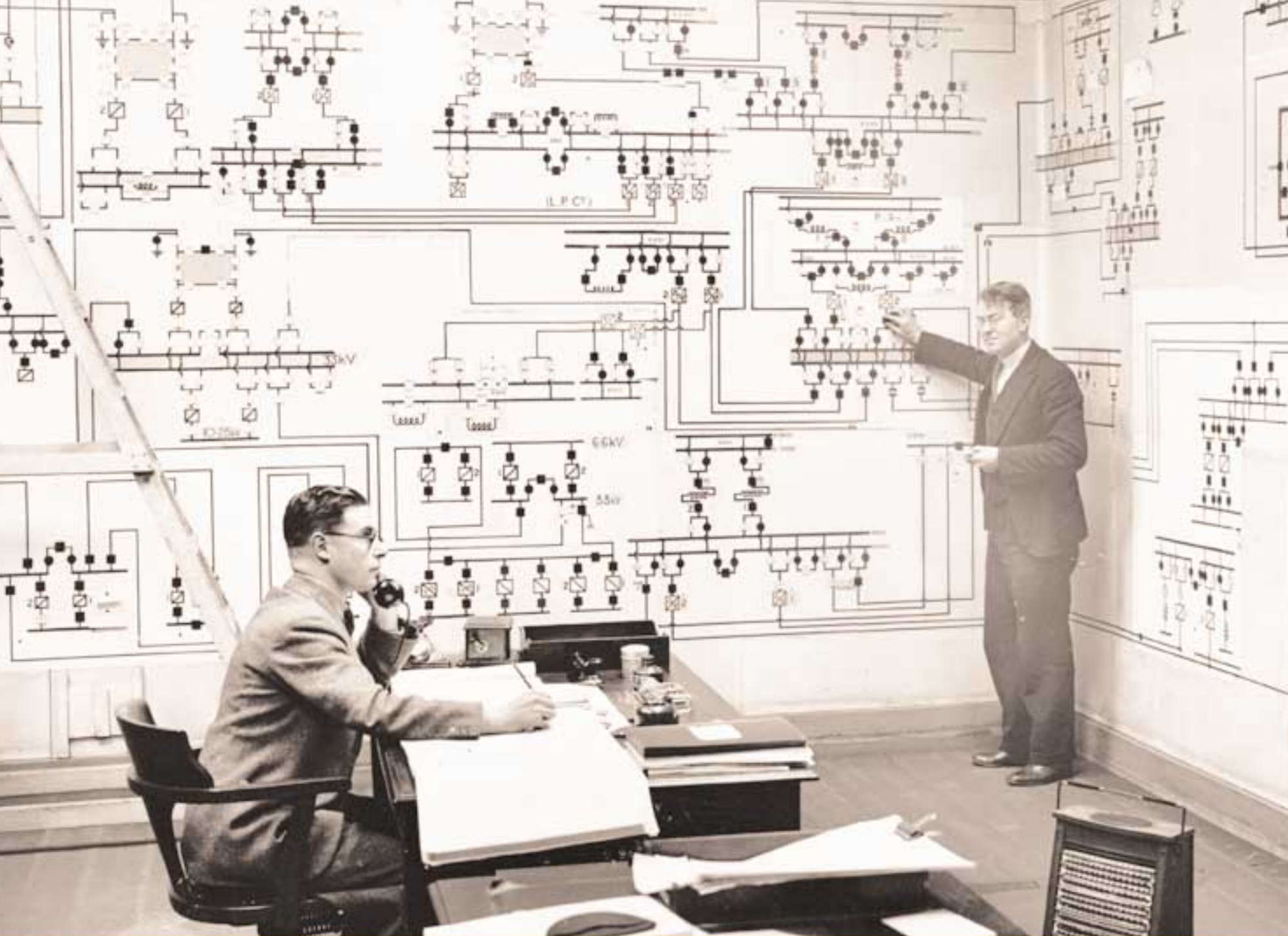
**Starbase Corp.** has postponed the closing of a round of equity financing in the wake of several investors telling the company they would terminate their obligation. **Special Situations Fund** and **ComVest Venture Partners** said they were withdrawing from the financing because Starbase had used earlier proceeds to make a loan to Phil Pearce, one of the company's directors . . . **XML Global Technologies Inc.** has closed a \$2 million round of equity funding with **Paradigm Group LLC**. Paradigm will receive 10 million shares of common stock priced at 20 cents per share, along with 6 million warrants at 50 cents per share. If exercised, the warrants could yield an additional \$3 million to XML Global . . . **VA Software Corp.** announced late last month it lost money in the fourth quarter and fiscal year ended July 27. For the quarter, the loss on a total reported basis was \$18.8 million, or 35 cents per share, which is a marked improvement over year-earlier losses of \$290.1 million and \$5.58 per share. The FY 2002 loss was \$91 million, compared with a loss of \$525.3 million in 2001. z

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| <b>Software Test Automation Conference &amp; Expo</b>  | <b>Sept. 24-27</b>     |
| Boston<br>SOFTWARE QUALITY ENGINEERING<br><a href="http://www.sqe.com/testautomation">www.sqe.com/testautomation</a>   |                        |
| <b>Internet World</b>  | <b>Sept. 30-Oct. 3</b> |
| New York<br>PENTON MEDIA INC.<br><a href="http://www.internetworld.com/events/fall2002">www.internetworld.com/events/fall2002</a>                                    |                        |
| <b>Mac OS X Conference</b>   | <b>Sept. 30-Oct. 3</b> |
| Santa Clara<br>O'REILLY & ASSOCIATES INC.<br><a href="http://conferences.oreillynet.com/macosx2002">http://conferences.oreillynet.com/macosx2002</a>                 |                        |
| <b>Web Services Development Conference</b>   | <b>Oct. 1-2</b>        |
| New York<br>BZ MEDIA LLC<br><a href="http://www.wsdevcon.com">www.wsdevcon.com</a>   |                        |
| <b>Web Services Edge West</b>  | <b>Oct. 1-3</b>        |
| San Jose<br>SYS-CON MEDIA INC.<br><a href="http://www.sys-con.com/WebServicesEdge2002West">www.sys-con.com/WebServicesEdge2002West</a>                               |                        |
| <b>Gartner Symposium ITxpo</b>   | <b>Oct. 6-11</b>       |
| Lake Buena Vista, Fla.<br>GARTNER INC.<br><a href="http://www.gartner.com/2_events/symposium/sym12/sym12.jsp">www.gartner.com/2_events/symposium/sym12/sym12.jsp</a> |                        |
| <b>CTIA Wireless I.T. &amp; Internet</b>   | <b>Oct. 16-18</b>      |
| Las Vegas<br>CELLULAR TELECOMMUNICATIONS & INTERNET ASSOCIATION<br><a href="http://www.wirelessit.com/general">www.wirelessit.com/general</a>                        |                        |
| <b>Macromedia DevCon</b>   | <b>Oct. 27-29</b>      |
| Lake Buena Vista, Fla.<br>MACROMEDIA INC.<br><a href="http://www.macromedia.com/go/devcon">www.macromedia.com/go/devcon</a>  |                        |
- Information is subject to change. Send news about upcoming events to [events@bzmedia.com](mailto:events@bzmedia.com).







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